

1967

AAVEB

ANNUAL

SCIENTIFIC

362.41
Amer 2
1967

BLINDNESS

1967

AAWB

AMERICAN ASSOCIATION OF WORKERS FOR THE BLIND, INC.

ANNUAL

1511 K Street, N.W., Washington, D.C.

Copyright, 1967, by the
American Association of Workers for the Blind

Library of Congress Catalog Card Number: 64-24006

Printed in the United States of America
Washington, D. C.

PREFACE

BLINDNESS 1967 is the fourth issue of an annual published by the American Association of Workers for the Blind under a training grant from the Vocational Rehabilitation Administration, Department of Health, Education, and Welfare. It is our plan to provide a forum for important and timely articles—with depth—in our own field and in related fields. Experts in the many categories of work with blind persons will be commissioned to conduct the essential research and prepare the articles so that their continuing value will be assured.

Copies of BLINDNESS 1967 are distributed to members of the Association as a function of membership. The Library of Congress, Division for the Blind, will make the annual available for regional libraries in both braille and recorded form.

BLINDNESS 1967

Editor — Isabella S. Diamond

Editorial Board

Louis H. Rives, Jr., *Chairman*
Mary K. Bauman
Sidney B. Cohen
Charles Gallozzi
Marjorie S. Hooper
Berthold Lowenfeld, Ph.D.
Douglas C. MacFarland, Ph.D.
Clayton A. Morgan
Daniel O'Connor
George Werntz, Jr.
Norman M. Yoder, Ph.D.

C. Warren Bledsoe, *Principal Consultant*
Robert S. Remer, *Consultant*

Officers and Board of Directors

Louis H. Rives, Jr. — *President*
Arthur N. Magill — *President Elect*
Howard H. Hanson — *Secretary*
Harold Richterman — *Treasurer*

Lila Lampkin
I. N. Miller
Ross C. Purse
Robert H. Whitstock
Donald Blasch
Gordon L. Joyner
Wesley D. Sprague
Louis Viececi
M. Robert Barnett
Mrs. Mary K. Bauman
Herbert R. Brown
Russell C. Williams

TABLE OF CONTENTS

The Impossible Dream*

A Living Philosophy—Its Significance to the Agency
Serving Blind Persons 1

GEORGE WERNTZ, JR. is Executive Vice-President and Secretary, The Seeing Eye, Morristown, New Jersey.

Time Compressed Recorded Speech and Faster
Aural Reading 11

EMERSON FOULKE, PH.D., is associated with College of Arts and Sciences, Department of Psychology and Social Anthropology, University of Louisville, Louisville, Kentucky.

The Enjoyment of the Arts—Another Aspect of
Rehabilitation 21

MARY ELIZABETH SWITZER is Commissioner, Vocational Rehabilitation Administration, Department of Health, Education, and Welfare, Washington, D. C.

The Pros and Cons of an Eye Institute 35

THOMAS D. DUANE, M.D., is associated with Jefferson Medical College, Philadelphia, Pennsylvania.

The International Program of the Vocational
Rehabilitation Administration 41

JOSEPH M. LARocca was, until December 1965, Chief of the International Rehabilitation Activities, V.R.A. (H.E.W.)

*"The lyrics quoted and reproduced in this book whether in whole or in part are from the song entitled, THE IMPOSSIBLE DREAM (The Quest), from the musical play, "Man of La Mancha", lyrics by Joe Darion and music by Mitch Leigh."

"Copyright (C) 1965 by Andrew Scott, Inc., Helena Music Corp. and Sam Fox Publishing Company, Inc. By Special Permission."

An Anthology of Readings About Blindness 83

C. WARREN BLEDSOE *is Consultant, Division of Services to the Blind.*

A Treatment Program for Multiply-Handicapped Blind Young Adults 89

(A Factual and Philosophical Description of a Program instituted by the Jewish Guild for the Blind, New York City.)

LAWRENCE GOODMAN *is Assistant Professor, New York Medical College, New York City.*

Teacher Training—Whence and Whither Bound? 105

GEORGIA LEE ABEL *is Professor of Education, Department of Special Education, San Francisco State College, San Francisco, California.*

U. S. Government Sponsored Research to Study Blindness, 1967 Supplement. 127

This is the third supplement sponsored by MARY E. SWITZER and C. WARREN BLEDSOE, Vocational Rehabilitation Administration, H.E.W.

The Best of the Past for the Present: No. 3 and No. 4 of a Series of Reprints. 159

Maurice de La Sizeranne —
The Blind as Seen Through
Blind Eyes (Chapters II and
III).

BERTHOLD LOWENFELD, PH.D., *is the author of the accompanying "Portrait" of M. De La Sizeranne.*

Valentin Häuy —
An Essay on the Education of
the Blind.

MR. BLEDSOE *is the author of the accompanying "Portrait" of M. Häuy.*

THE IMPOSSIBLE DREAM*

To dream the impossible dream
To fight the unbeatable foe
To bear with unbearable sorrow
To run where the brave dare not go.

To right the unrightable wrong
To love pure and chaste from afar
To try when your arms are too weary
To reach the unreachable star!

This is my quest, to follow that star
No matter how hopeless, no matter how far;
To fight for the right without question or pause,
To be willing to march into hell for a heavenly cause!
And I know, if I'll only be true to this glorious quest
That my heart will lie peaceful and calm,
when I'm laid to my rest
And the world will be better for this
That one man, scorned and covered with scars
Still strove with his last ounce of courage
To reach the unreachable stars

*. "The lyrics quoted and reproduced in this book whether in whole or in part are from the song entitled, THE IMPOSSIBLE DREAM (The Quest), from the musical play, "Man of La Mancha", lyrics by Joe Darion and music by Mitch Leigh."

"Copyright © 1965 by Andrew Scott, Inc., Helena Music Corp. and Sam Fox Publishing Company, Inc. By Special Permission."

A LIVING PHILOSOPHY—ITS SIGNIFICANCE TO THE AGENCY SERVING BLIND PERSONS

By George Werntz, Jr.

“A man's philosophy, by imperceptible degrees, colors the whole of his life and affects his attitude towards all things in heaven and on earth. In like manner, the prevalent philosophy of a people gradually transforms all their social institutions.”(1)

One of the more significant developments in work with and for blind persons in recent years has been the highly organized and conscientiously executed task of writing standards for the administration and operation of the wide variety of agencies that carry on such work in the United States. Undoubtedly the prime movers in this enormous undertaking had basic beliefs, a rationale or philosophy that led them into and through this task.

In the report of the Commission on Standards and Accreditation of Services for the Blind, we need look no further than the foreword, written by Arthur L. Brandon, Chairman of the Commission, for a statement of ideas that, at least partially, can be said to comprise the Commission's philosophy. (2) In effect, Dr. Brandon states or implies something like this:

We believe that whether one receives or provides services, it is a common desire in an enlightened and growing society that services undergo progressive improvement.

We believe that the need has been felt for some time for specific standards by which the effectiveness of activities in this field could be gauged and upgraded.

We believe that such standards can be consensually achieved through the shared intelligence and experience of 100 or more practitioners in 12 separate areas of administration and service.

We believe that such standards should be dynamic, subject to criticism, revision and amplification, if they are to serve present and future interests of blind persons whom they are ultimately designed to benefit or if they are to win and hold the support of the public that makes possible their implementation.

These words are, in part, of course, paraphrasings of some of the stated aims of Dr. Brandon and the Commission, not direct quotations. In this writer's estimate they, nevertheless, reasonably represent the major basic principles that underlie the Commission's not inconsiderable undertaking.

Among the 12 sets of standards for administration and direct services in the selected areas included in "The Comstac Report" there is repeated reference to the chartered or legal aims and purposes of the agencies involved. There are, however, only three specific references to agency philosophy:

"A-1 Agency Function and Structure

"3.2.1. In cooperation with the governing or advisory body, the administrator is responsible for preparation of a manual describing the agency's structure, history, philosophy. . . ." (Page 56)

"S-1 Education

"1.1. PHILOSOPHY AND OBJECTIVES. The total professional staff participates in stating the school's philosophy and objectives.

"1.1.1 The philosophy and objectives express the unique perception of the role of the school held by its staff and are consistent with the principles of American democracy.

"1.1.2 The philosophy and objectives reflect knowledge and consideration of other philosophies and objectives held by other schools in the United States." (Page 128)

"S-3 Orientation and Mobility Services

"1.2 PRINCIPLES AND PHILOSOPHY OF OPERATION. The agency has a written statement of the principles and philosophy on which its operations are demonstrably based.

"1.1.2 This statement is reviewed and, if necessary, revised by staff and governing body at least every five years." (Page 226)

In the context in which the word is used in this paper, philosophy is a body of basic principles underlying a branch of learning, a major discipline, a religious system or a human activity. (3) The basic philosophy of any organization concerned with the welfare and advancement of humanity serves as its keel and rudder, keeping it on course toward the realization of its highest aims. It is a common belief that dialogues concerning philosophy and the writing of statements of philosophy are the exclusive province of academicians, ensconced in their ivory towers and insulated from the world of reality. Practical men, the real doers, somehow give the impression that philosophical foundations for what they do or propose to do are non-essential luxuries. At best they imply that although such foundations do exist, it is not necessary to identify them or to re-examine them critically to ensure that they are consistent with the public interest. H. A. Overstreet has, nevertheless, written ". . . individuals and organizations do a multitude of things. The knowledge of how to do each thing is indeed important. . . . But by far the most important is the system of values which determines what things one will do and not do." (4) And, we would add, why one does or does not do them.

G. K. Chesterton, British essayist and novelist wrote: "...the most practical and important thing about a man is still his view of the universe. . . . for a landlady considering a lodger it is important to know his income, but still more important to know his philosophy. . . .for a general about to fight an enemy it is important to know the enemy's members, but still more important to know the enemy's philosophy." (5) With Chesterton, psychologist William James agrees: "I know that you. . . .have a philosophy. . . .and that the most interesting and important thing about you is the way in which it determines the perspective in your several worlds. . . .The philosophy which is so important in each of us is not a technical matter; it is our more or less innate sense of what life honestly and deeply means. It is only partly got from books; it is our individual way of just seeing and feeling the total push and pressure of the cosmos." (6)

Need Agreed-Upon Body of Principles

If an individual's philosophy is important, even more important is the philosophy of an institution or agency, especially one that would serve high purposes. And who would dispute that any organized group helping human beings realize their full potential is engaged in activity of high purpose? Each agency and its staff, in gaining a clear perspective of their joint purposes, unquestionably need an agreed-upon body of principles from which they determine what things they will do and by what means, as well as what they will not do.

In such a system of values, ends are obviously more important than means, but the means must be consistent with the ends and reflect the high purposes to which the agency is devoted. In writing standards for orientation and mobility services, the committee which the writer had the privilege of chairing agreed that a dog guide organization in particular, because of its unique mission and appeal, as well as its vulnerability to exploitation, should have a written statement of its philosophy. Such a statement should set forth the fundamental principles or beliefs of the organization, and its actions should consistently reflect those principles. In short, what an organization does will, ideally, mirror that which it claims to believe.

The principles and beliefs of The Seeing Eye began to take form early in its history, and they have been stated or implied in numerous official publications, as well as in books, articles and addresses by officers of the organization or designated spokesmen. (7-11) Joining the Seeing Eye staff in 1950, after nearly two decades as a secondary school teacher and college admissions dean, the writer knew at first-hand the importance educators place on their statements of philosophy. Philosophically based as Seeing Eye principles and standards already were, it was a natural step to involve staff associates in dialogues that led to the writing of a more formal statement of Seeing Eye philosophy. Its original preparation and periodic, critical review have proved a stimulating staff exercise and have brought into sharp focus the true meaning of day to day tasks.

Subject to Periodic Review

The language in which such statements, including The Seeing Eye's, are written tends to be academic. If written in the proper spirit, they are not really intended for the public at all. In this sense, they are more like the

old family credo, which we learned from our elders, questioned as we ourselves grew older and from which we gained a kind of serenity and quiet pride whenever its wisdom proved sound.

Statements of philosophy per se should not be viewed as primarily promotional or fund-raising material. They do not tell what the agency does so much as what, in its mind and heart, it believes. It is also important to remember that they should never be considered to have reached final form, that they are subject to periodic review and criticism in soul-searching sessions of staff and advisory boards.* And as always, sound public relations material, in publicizing the activities of an agency, will reflect the agency's basic philosophy, provided the activities themselves are consistent with that philosophy. At The Seeing Eye, editorials written by the executive officer for a quarterly newsletter have proved an effective medium for illustrating the organization's philosophy in action. (12) Many of these have drawn favorable comment and one was quoted at length on the editorial page of a large daily newspaper in New England. (13)

The statement of Seeing Eye philosophy has heretofore been available only as a working document for members of The Seeing Eye family and for occasional study by interested individuals or groups of professional status. Current interest in standards of operation, however, points up what perhaps should be a greater concomitant interest in principles that underlie standards, i.e., in basic philosophy. From this viewpoint, therefore, one agency's statement of philosophy is here presented. Those who work with and for blind persons may wish to compare it with their own agency statements or perhaps refer to it as a guide in drafting documents of their own beliefs and principles. The pattern followed by The Seeing Eye has been to state what the corporate body — trustees and staff members — believes, what it subscribes to. The statement is divided into two major segments, the first dealing with certain broad concepts relating to blindness and human beings. This section serves as a kind of preamble, as it were, to the second section, which deals with specific concepts relating to blind persons and the purposes and operation of The Seeing Eye, Inc.

STATEMENT OF PHILOSOPHY OF THE SEEING EYE, INC.

I. WITH RESPECT TO BLINDNESS AND HUMAN BEINGS

The Seeing Eye Believes. . . .

1.that the basic qualities and needs of human beings are present to the same degree in human beings who are blind as in those who see. The respect one holds for these qualities and these needs as they exist in his fellowmen — in fact, the respect held for human personality itself — should not vary in degree between sighted and blind persons.

*Dynamic philosophies that exalt change must at some point, however, regularly review what in many societies are regarded as the "eternal verities." Roscoe Pound, dean of the Harvard Law School from 1916-1936, doubtless had this in mind when he wrote: "The vital, the enduring part of the law is in principles — starting points for reasoning — not in rules. Principles remain relatively constant or develop along constant lines. Rules have relatively short lives."

2.that individuals differ from one another in many ways but irrespective of these differences, certain basic human needs are common to all. These are:

- a. The need for physical health
- b. The need for self-respect
- c. The need for social-acceptance
- d. The need for satisfying occupation
- e. The need for recreation
- f. The need for freedom of choice
- g. The need for satisfying exchange of human affection

3.that blindness is a major handicap that can occur in human beings of all ages and conditions. When blindness does occur it imposes many problems that seriously affect the individual's capacity to satisfy his basic needs and his ability to attain the highest goals of which he might otherwise be capable. These problems* include:

- a. Restriction of physical mobility
- b. Emotional frustration
- c. Social isolation and segregation
- d. Economic insecurity
- e. Loss of personal independence
- f. A sense of being less than a whole person

4.that the problems of the congenitally blind will differ somewhat in variety and degree from those of the adventitiously blinded, but solutions to the problems of both groups originate in the mind and spirit of the individual. It is the responsibility of a free society to provide the atmosphere and conditions under which the innate drives toward problem-solution may be most effectively expressed.

5.that while the drives to solve problems imposed by blindness originate within the individual, the direct or indirect help received from family, friends and professionals in the field — their influence and their attitudes — is of great importance. These influencing agents can spark the drive, they can be indifferent to it or they can smother it. Such agents must at all times endeavor to respect the whole individual in his struggle to solve his problems and satisfy his needs.

6.that even when the aids, influences and attitudes of "the inner circle" of family, friends and professionals function at maximum level, there remains an "outer circle" composed of society in general, the attitudes and actions of which, in the main, too often militate against the blind person's efforts to achieve his goals. Because pity, sentiment, self-aggrandizement and other factors can overshadow understanding of the

*Compare with "the twenty losses" identified by Rev. Thomas J. Carroll in BLINDNESS, Little, Brown and Company, Boston, 1961.

problems involved, the general public must always be taken into account in all efforts to help solve said problems.

7.that the nature of the problems imposed by blindness being what it is, all organized activity designed to help blind people solve their problems requires the establishment of the highest standards of operation at all levels and in all areas. Education for blind children, for example, cannot be "just as good" as education for sighted children; it must be the best, if the mature blind person is eventually to overcome the majority of his problems and live on equal footing with sighted people.

II. WITH RESPECT TO BLIND PEOPLE AND THE SEEING EYE

We Believe

1.that the basic concern of The Seeing Eye is to aid blind persons in their rehabilitation, in their achievement of independence and integration. Through The Seeing Eye this is accomplished by providing qualified blind men and women with educated dog guides and instruction in their proper use and control for purposes of safe and efficient physical mobility.

a.that The Seeing Eye service is to be supported, rendered and interpreted to the public in a manner thoroughly consistent with the total needs of blind people and the finer instincts of the human race. Only in this way will the total aims of The Seeing Eye, of its students and graduates be served to the best advantage, without exploitation of the individual or debasement of his dignity.

2.that blind persons ready for the consideration of the various rehabilitation aids (including mobility aids) will have access to complete and unbiased information on the aids available. Because the right to make decisions affecting one's development is an important criterion of the whole mature personality, a blind person's decision as to the specific aid or aids to be sought will be the result of free choice, as will the selection of the dog guide school to be attended, should the individual decide a dog guide to be of advantage to himself.

3.that the establishment of a dog guide school, as with other activities aiming to seek public support and to promote human welfare, will be endeavored only after thorough and competent investigation reveals a justifiable need.

4.that because individual differences exist among blind, as they do among sighted people, and because the ability to use a dog to advantage depends on certain innate as well as acquired characteristics, it is recognized that not all blind persons can use a dog guide effectively or will wish to avail themselves of this particular mobility aid. In the administration of qualifying standards, however, ample flexibility should

exist so as to allow for an appropriate representation of so-called borderline cases, thus giving due regard to frequently indeterminable human drives and the adaptability of the dog, which cannot always be measured scientifically. All other things being equal, that blind person is best equipped to succeed with a dog guide who is conscientiously striving to solve the problems imposed by blindness and to satisfy basic human needs. Mendicancy is not considered evidence of conscientious striving toward these aims.

a.that blind children younger than 14 or 15 years of age will, as a rule, be under the influence of many fundamental growth processes, during which period a dog guide cannot be considered a practical or useful adjunct. Until these processes have brought the individual up to acceptable levels of physical, mental or emotional maturity, The Seeing Eye believes it is a disservice to consider placing a dog guide with a blind child.

5.that when two different types of living organism — in this case, man and dog — are involved in mastering a purposeful activity, appropriate selective procedures must be established and competently administered. A systematic program of education, founded on research and experience in pertinent scientific disciplines, must also be established and administered by qualified personnel of integrity. The aim of the selective procedures and the educational program is the total efficiency and safety of the dog-man unit in achieving their purpose. Selection and education apply equally to dog, to blind person and to instructor.

a.that very few staff personnel will be acquired ready-made but must be selected with utmost regard for character, native ability, personality, physical qualifications that include normal vision; also appropriate education and experience in allied fields. An enlightened program of in-service training is of paramount importance, as are ethical personnel procedures designed to obtain and hold personnel of quality.

b.that the man-dog relationship is a dynamic process, and it is imperative that a well-balanced program of continuing interest and co-operation be maintained, if the relationship is to realize its intended value, efficiency and safety after the instructional period at the school. This calls for the maintenance of appropriate lines of communication between the blind person and the school, a readiness on the school's part to offer such professional assistance as the situation requires, and a rendering of it without invasion of privacy or infringement on human dignity. It calls also for continuing self-appraisal by the organization, the maintenance of appropriate records and research, to the end that its service may continue to grow and improve.

c.that when to the complexity of the man-dog relationship are added the factors of public attitudes and public support, the necessity of staff excellence and integrity cannot be over-emphasized. This means a capacity to resist any temptation to lose sight of the ultimate aim of a dog guide school.

6.that the dog is not an end in itself but the means to an end, and that end is the acquisition of mobility, as a vital aid in achieving rehabilitation, independence and integration in a sighted society. The unique wisdom, loyalty and capacity of the dog to adapt to the needs of a loving and beloved master must, however, be respected at all times. The dog, therefore, should not be exploited any more than his blind master, if together they are to realize their highest potential.

a.that as man realizes his maximum potential through the struggle to solve his problems and meet his basic needs, so does the dog realize its maximum potential in aiding a purposeful master. The essence of their joint success is VALID PURPOSE.

b.that the systematic education of the dog by qualified instructors and its use by qualified blind persons are based on understanding of the dog's desire to please his master and not on imposition of the master's will.

7.that the operation of The Seeing Eye is a public trust, and as such it is not operated for profit. The trustees and staff of the organization recognize their accountability to the public, both blind and sighted, for its standards of operation and for its financial integrity.

a.that the organization should continue to serve qualified blind people of the nation and of Canada without regard to race, color or creed.

And, Finally, We Believe Implicitly. . . .

b.in the blind person's conscious or latent desire for independence and his need for self-respect. This desire and need are best met in an atmosphere and through a carefully planned activity that foster independence and self-respect. The giving or taking of something for nothing as an inherent right, the treatment of blind people as children or the objects of charity, are incompatible with the democratic concepts of independence and self-respect.

Trainees are to be treated as MATURE INDIVIDUALS at all times and are expected to meet reasonable obligations, thus expressing The Seeing Eye's confidence in them to live maturely and to meet their obligations in a sighted world. In the long run, the rehabilitation of a blind person merits not only the best efforts of those seeking to help him, but his own as well.

The words of the late William H. Kilpatrick, in speaking about philosophy of education, are equally applicable to rehabilitation and all work with blind

persons: "There is, of course, no one philosophy of education to be ascribed to America. There are or should be, however, certain tendencies more or less consistent with each other which, taken together, may with reasonable accuracy be said to characterize the dominant American attitude in educational matters. Such tendencies, the philosophy of education should sense and criticize with a view to securing a more defensible unity of outlook and endeavor. Beyond these characteristic trends there will thus result individual philosophies." (14)

One such philosophy of work with blind persons has here been presented. It is hoped that it may prove useful to agencies when next they review their own philosophies, as well as to those who may contemplate formalizing the statement of theirs. It may at least provide for the latter guidelines of how or how not to proceed. Whatever the approach and the end product, however, this writer and his Seeing Eye colleagues believe that the effort will prove a highly beneficial one.

REFERENCES

1. Thomas E. Shields, "Philosophy of Education," Catholic Press, Washington, D. C., 1917.
2. "The COMSTAC Report: Standards for Strengthened Services," Edited by Frances A. Koestler (National Commission on Standards and Accreditation of Services to the Blind, New York, 1966).
3. Webster's Third New International Dictionary (Unabridged) G. & C. Merriam Co., Springfield, Mass., 1959.
4. H. A. Overstreet, "Finding Our Philosophy," in The Thinker, September, 1931.
5. G. K. Chesterton, "Heretics and Other Essays."
6. William James, "Pragmatism," Longmans and Green, New York, 1907.
7. Dorothy H. Eustis, "A Report on Guide Dogs for the Blind." An address delivered to the World Conference for the Blind, April, 1931, New York, N. Y.
8. Willi H. Ebeling, "The Guide Dog Movement." In ZAHL, Paul A., editor, "Blindness." Princeton University Press, Princeton, N.J., 1950.
9. Dickson Hartwell, "Dogs Against Darkness - The Story of The Seeing Eye", Dodd, Mead & Company, New York, 1942.
10. Morris S. Frank and Blake Clark, "First Lady of The Seeing Eye," Henry Holt and Co., New York, N.Y., 1957.
11. Mary D. Campbell, "Dog Guides for the Blind," in "What of the Blind?" Vol. II, Published by the American Foundation for the Blind, New York, N.Y., 1941.
12. George Werntz, Jr., "As We See It," editorial columns in The Seeing Eye Guide, published March, June, September and December by The Seeing Eye, Inc., Morristown, N. J.

13. "The Independent Spirit" an editorial in The Courant, Hartford, Conn., January 6, 1965.
14. William H. Kilpatrick, in an address at Teachers College of Columbia University, April 16, 1928 and published in Teachers College Record, Vol. 30, (1928-29).

"There are vast areas of misunderstanding and mistrust among nations today, born primarily of differences in social, economic and health standards, national mores, and the problems of education and communication. But in this sea of differences, there are islands of quick understanding, honest affection and mutual trust. One of these is the internationally shared dream of all people that the spectre of disease and the humiliation of the dependent cripple shall not forever be an inescapable part of their lives.

It is my firm belief that a well-planned and well-defined international program in these fields would offer an unparalleled opportunity to advance understanding and peace among mankind."

Mary E. Switzer

TIME COMPRESSED RECORDED SPEECH AND FASTER AURAL READING

By Emerson Foulke

The blind student is confronted with a serious problem because of the slow rate at which he is compelled to read. A practiced adult braille reader can be expected to read at about 110 wpm (words per minute) on the average (Foulke, 1964). Of course, there are a few superior braille readers who read much faster than this, but even the relatively good braille reader cannot keep up with the average visual reader of print. When a blind person reads by listening to material read orally by a professional reader, he is receiving information at a rate of approximately 175 wpm. Many practiced adult readers of print read at a rate of 400 or 500 wpm, or even faster.

The slow rate at which the blind person must receive written information is more than just a nuisance. We live in a highly complex society which is world wide in scope, changing continuously, and increasing in complexity rapidly. For an individual to react to and participate in this society effectively, he must be informed. He must keep abreast of developments on many fronts, and to do so, he must read voluminously.

In addition to these general demands, the individual who must keep informed about developments in a field of knowledge related to his profession or line of work must contend with an increasingly heavy reading burden. There has truly been an information explosion in all fields. The blind person whose reading rate, almost without exception, is well below 200 wpm, is poorly equipped to deal with this problem. There just is not enough time in the day for him to do the reading he must do in order to stay abreast. This problem is aggravated further by the fact that information is accumulating at a geometric rate. The problem confronting the blind individual, therefore, is becoming progressively more acute.

An obvious approach toward the solution of this problem is the search for a way of increasing the rate of information transmission in whatever system of communication the blind person uses. Although research may indicate a way of increasing the braille reading rate, the method by which this might be accomplished is not now apparent. In general, information may be transmitted more rapidly by ear than by touch and the widespread use of recorded materials by blind readers has meant a significant amelioration of their reading problem.

The reading rate of the person who reads by listening has generally been set by the rate at which his reader, live or recorded, speaks. There are several ways in which this rate may be increased. Associated with each approach are advantages and disadvantages that must be weighed carefully before any practical scheme is adopted. In the succeeding pages, several methods of accelerating speech are described. Following this, there is a

brief review of findings regarding the comprehension of accelerated speech. Finally, some conclusions are drawn regarding the current status of the technology of speech accelerations, and the role of accelerated speech in solving the reading problems of blind readers.

METHODS FOR THE ACCELERATION OF SPEECH

When the word rate of a listening selection is increased, the time required for its delivery is compressed. Speech treated in this manner is therefor often referred to as time compressed or simply compressed speech.

Time Compression by Rapid Speaking

Within limits, word rate is under the control of the speaker (Goldstein, 1940; Nelson, 1948; Harwood, 1955; Enc and Stolurow, 1960). This method has the virtue of simplicity, and requires no special apparatus. However, speaking at a rate that is faster than normal introduces undesired changes in vocal inflection and fluctuations in speaking rate, and a low upper limit makes the method generally unsuitable.

The Speed Changing Method

The word rate of recorded speech may be changed simply by reproducing such speech at a different tape or record speed than the one used during recording. If the playback speed is slower than the recording speed, the word rate is decreased and the speech is expanded in time. If the playback speed is increased, the word rate is increased and the speech is compressed in time. Changing word rate in this manner is, technically speaking, quite easy. With relatively simple and inexpensive modifications, the speed of many tape and record reproducers may be made continuously variable. However, when speech is accelerated in this manner, there is a shift in the frequency components in the voice signal that is proportional to the change in tape or record speed. For instance, if the speed is doubled, the component voice frequencies will be doubled, and overall vocal pitch will be raised one octave. Speech, the rate of which has been altered in this manner, has been examined in several experiments (Klump and Webster, 1961; McLain, 1962; Foulke, 1966).

Time Compression by the Sampling Method

In 1950, Miller and Licklider demonstrated the redundancy in speech by deleting segments of the speech signal. This was accomplished by a switching arrangement that permitted the speech signal to be "turned off" periodically. They found that so long as such interruptions occurred ten times per second or more, the interrupted speech was easily understood. (This is true because when speech is interrupted in this way often enough, the discarded portions of the message are brief enough so that no entire speech sound is ever discarded.) Intelligibility of monosyllabic words did not drop below 90% until 50% of the speech signal had been discarded. Thus, it appears that a large portion of the speech signal can be discarded without serious disruption of communication. Garvey (1953), taking cognizance of these results, reasoned that if the gaps in a message that had been periodically interrupted were closed, the result should be time compressed intelligible speech without distortion in vocal pitch.

To test this notion, he prepared a tape on which speech had been recorded by periodically cutting out short segments of the tape, and by splicing the free ends of the retained tape together again. Reproduction of this tape achieved the desired effect. Garvey's method was, of course, too cumbersome for any but research purposes. However, the success of the sampling approach having been shown, an efficient technique for accomplishing it was not long to follow.

In 1954, Fairbanks, Everett and Jaeger published a description of an electromechanical apparatus which makes possible the time compressed or expanded reproduction of recorded tape. Since that time, other similar equipment has been made available commercially. A description by Foulke (1964) of the device used in his research characterizes the electromechanical method of sampling speech.

"The device we used to compress speech is the Tempo Regulator, manufactured by Telefonbau und Normalzeit, Frankfurt am Main, Germany.¹ The Tempo Regulator samples recorded tape in the following manner. The tape passes over the curved surface of a cylinder and wraps around the cylinder enough to make contact with one-quarter of its circumference. Four tape reproducing heads are spaced equally around the circumference of the cylinder. When this cylinder is stationary, and the tape is moving at the same speed at which it moved during recording, 15 ips (inches per second), it makes contact with one of the reproducing heads and the signal is reproduced as recorded. When the Tempo Regulator is adjusted for some amount of compression, the speed of the tape increases and the cylinder begins to rotate in the direction of tape motion. As the speed of the tape is increased, the rotational speed of the cylinder is increased so that the speed of the tape relative to the surface of the cylinder is held constant at 15 ips. Under these conditions, each of the four heads, in turn, makes and then loses contact with the tape. Each head reproduces, as recorded, the material on the portion of the tape with which it makes contact. When the cylinder is so positioned that one head is just losing contact with the tape while the preceding head is just making contact with the tape, the tape that is wrapped around the cylinder between these two heads never makes contact with a reproducing head and is therefore not reproduced. The segment of the tape that is eliminated from the reproduction in this manner is always the same length, one-quarter of the circumference of the cylinder. The amount of speech compression depends upon the number of such eliminations per unit time, and this, in turn, depends upon the tape and cylinder speed. Speech may be expanded by reversing the direction of rotation of the cylinder and moving the tape across the cylinder at a slower speed than was used during recording."

The apparatus described by Fairbanks, et al., makes use of the principle just described. However, it differs in that tape speed and cylinder speed are independently variable, making it possible to vary the temporal value of the discarded portions of the message.²

A computer also may be used to compress speech by the sampling method (Scott, 1965). In this approach, the electrical analog of the acoustical information in speech, e. g., the output of a microphone or tape reproducing head, is temporally segmented by an analog-to-digital converter and these segments are stored in the computer. Then, the computer samples these segments according to a sampling rule for which it has been programmed, e.g., discard every third segment. The sample thus constructed is supplied to the input of a digital-to-analog converter and the signal at the output of this converter, compressed in

time by an amount equal to the cumulative temporal value of the discarded portions, is appropriate for transduction to acoustical form again.

Two variables that may have an important bearing on the character of the speech signal that has been compressed in time by the sampling method, are the duration of discarded and retained portions of speech, and the rule according to which speech is sampled. In devices like the Tempo Regulator and its successor, the Eltro Information Rate Changer, the duration of retained portions of speech is variable, but the duration of discarded portions is fixed by the distance between consecutive heads along the surface of the rotating cylinder that samples the tape to be compressed, and is not variable. Using the Fairbanks scheme, the duration of both retained and discarded portions is variable. Using the computer, the duration of both retained and discarded portions is variable over a wide range of values.

Electromechanical compressors, like the Eltro Information Rate Changer or the Fairbanks apparatus, are unselective with respect to the parts of a message that are discarded. Portions are discarded on a periodic basis and may occur anywhere within or between words, and it is quite unlikely that a given message, subjected to consecutive compressions, would be sampled in the same way twice. If sampling is accomplished manually, as Garvey did, some selectivity is possible, but at great expense of labor and time. With use of the computer, it is feasible to use a great variety of sampling rules. A program might, for instance, be written according to which the temporal interval between words were discarded, and the time filled by a given word was periodically sampled with the restriction that no consonantal sounds could be discarded.

From what has just been said, it would appear that the computer, because of its flexibility, offers the most satisfactory method for the time compression or expansion of speech. This may ultimately prove to be the case. However, at present, computer time is too expensive to justify the employment of a computer in this capacity for any but research purposes. For the present, the electromechanical compressor appears to be the most practical device.

Another method for the time compression of speech was conceived by scientists at Bell Laboratories. To test the feasibility of this method, a procedure was followed in which a computer was used to simulate constituent functions of the apparatus required by the method. Thus, it was possible to evaluate the method without having to construct an actual device. The method was successful, and the exclusive right to construct the equipment required by the method was given, by American Telephone and Telegraph Company, to the American Foundation for the Blind, where it is under construction at this time.

The method is one in which an elaborate filtering scheme is used to divide the speech spectrum into a large number of very narrow frequency bands. When a speech signal is applied to the input of this filter network, the frequency of the energy that is present in each of these bands is divided in half. The transformed frequencies are then recombined to produce a new speech signal, the component frequencies of which are one-half those of the original signal. When a tape recording of this signal is reproduced at twice the recording speed, the result is speech that has been compressed 50 0/0 in time, without distortion in vocal pitch. Compression accomplished by this method is called harmonic compression, and the device now under construction at AFB is to be known as the harmonic compressor.

Before leaving this topic, a final word is in order regarding the relative merits of the four general approaches that have been discussed. For reasons already given, time compression of speech that depends upon training an oral reader to speak at a faster than normal word rate is not practical and can be dismissed from further consideration. With respect to the remaining three approaches, however, there are several factors that must be taken into account before settling on a method.

The first factor is one of economics. The equipment required for the time compression of speech by the speed changing method is cheap, readily available, and easy to operate. In fact, many blind readers use this method when they play Talking Book Records, recorded at 33 1/3 rpm, at 45 rpm, a turntable speed that is available on many record players. Records played in this manner are compressed in time approximately 25 o/o and, assuming an original or uncompressed word rate of approximately 175 wpm, the compressed word rate is approximately 233 wpm. However, as already mentioned, the speed changing method produces distortion in vocal pitch which many people find quite annoying. The sampling approach avoids this distortion but the necessary equipment is quite expensive, far too expensive for individual ownership.

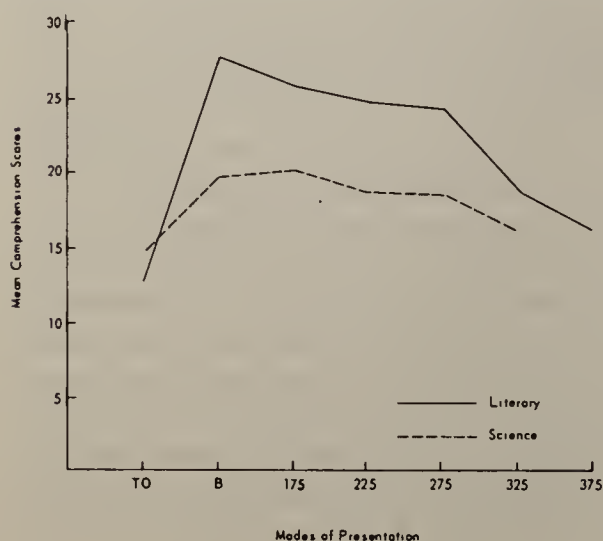
As matters presently stand, electromechanical speech compressors would have to be owned by libraries and other institutions involved in the distribution of recorded tapes to individual users, and these agencies would have to establish some kind of program for distributing time compressed tapes or records. The crucial test is, of course, the relative difficulty in understanding speech that has been compressed by the two methods. There is not a clear answer to this question, as yet. Garvey (1953) has shown a clear-cut superiority for the sampling method with respect to the intelligibility of single words. On the other hand, McLain (1962) and Foulke (1966) have not been able to demonstrate such a clear-cut advantage when the comparison is made in terms of the comprehension of prolonged listening selections. Further research on this point is needed. Of course, the preference of listeners is worth taking into account, and there can be little disagreement that speech compressed by the sampling method is more pleasing to hear than speech compressed by the speed changing method.

It is not yet possible to evaluate speech that has been compressed in time by the harmonic compressor. It will be necessary to compare the intelligibility of speech compressed in this manner with the intelligibility of speech compressed by other methods, but the necessary experimental materials will not be available until a working prototype of the harmonic compressor has been completed. Since the harmonic compressor does not rely upon sampling to accomplish compression, all of the speech information present in the original signal is preserved in the compressed signal. Thus, there is reason to believe that the signal quality of the harmonic compressor will be high. The fact that the harmonic compressor is capable of only one compression, 50 o/o, may prove to be a serious disadvantage. Unless the original word rate is unusually slow, speech compressed in time by 50 o/o may occur at a word rate that is too fast for many listeners and for many kinds of material. It is not yet possible to quote a price for the harmonic compressor. However, since its construction requires a large number of electronic components, it, like the equipment required for compression by the sampling method, will probably be far too expensive for individual ownership.

THE COMPREHENSION OF TIME COMPRESSED SPEECH

A good deal of research has now been conducted on the comprehension of time compressed speech. Two major sources of such research are the project at the American Institutes of Research, directed by Dr. David Orr,³ and the project at the University of Louisville, directed by the author.⁴ The results of the author's first experiment in this area (Foulke, et al., 1962) have proved fairly typical. In this experiment, two obvious questions were asked: (a) what is the relationship between word rate and comprehension? and, (b) in what way does this relationship depend upon the kind of material heard? To answer these questions, blind school children in the sixth, seventh and eighth grades listened to two selections, a literary and a scientific selection, presented at 175 (normal word rate), 225, 275, 325, and 375 wpm. For purposes of comparison, one group of children also read the selections in braille. Next, all children completed multiple choice tests covering the facts and implications of the selections. As a control, one group of children completed the tests without having been exposed to the selections.

The results of the experiment are summarized in Figure 1. In this figure, the first position on the x-axis, marked TO, refers to the Test Only group. The next position, marked B, refers to the braille reading group, which read



Change in Comprehension as a Function of Mode of Presentation

Figure 1

the scientific selection at a mean rate of 57 wpm, and the literary selection at a mean rate of 70 wpm. The remaining positions along the x-axis refer to the word rates at which the selections were presented aurally. Comprehension, as indicated by test scores, is scaled on the y-axis. For convenience of comparison, two curves, one describing the relationship between word rate and comprehension of the literary selection, and the other describing the relationship between word rate and comprehension of the scientific selection, have been drawn on the same graph.

Several features of the picture presented in this graph require comment. Increasing the word rate of listening selections produced only a moderate loss in comprehension in the range from 175 to 275 wpm. However, beyond this point,

comprehension began to fall rapidly and there was little evidence of comprehension at 375 wpm. The children showed better comprehension of the literary selection than of the scientific selection at all word rates. They probably found the literary selection more interesting and therefore attended to it more carefully. Comprehension of the scientific selection declined less rapidly with increasing word rate, but this was due to the fact that comprehension of the scientific selection was poorer at the normal word rate than comprehension of the literary selection, so that not as large a loss in comprehension was possible. It is also interesting to compare the performance of those who read by listening with the performance of those who read the selection in braille. Those who read by listening to material presented at 275 wpm comprehended only

slightly less than those who read the same selections in braille, and they did so in approximately one-fourth the time.

In order to evaluate these findings, one must consider not only the amount learned, but also the time spent in learning. Suppose, for instance, that a child who listened to the material at 275 wpm instead of reading braille, learned half as much in one-fourth the time. He could listen to the material a second time, and still save half the time spent in learning. As it turned out, the children who listened at 275 wpm comprehended very nearly as much as those who read the materials in braille. Had they been permitted a second hearing, they might have shown even better comprehension than the braille readers, and would have spent only half as much time learning.

The relationship between the amount learned and the time spent in learning is shown graphically in Figure 2. The values, in terms of which the curves in this figure are plotted, were obtained by dividing mean comprehension scores for each mode of presentation by the time required to present the material to that group. The resulting index numbers can be regarded as estimates of learning efficiency. Examination of these curves suggests that when the time spent in learning is taken into account, those subjects who heard the material at 325 and at 375 wpm were learning more in a given amount of time than those who read the material in braille. Thus, what appears to be poor comprehension may be good comprehension when the reduced listening time is taken into account.

The results of this experiment seemed to warrant the conclusion that if children, who were listening to time compressed speech for the first time, could show good comprehension of speech presented at 275 wpm, a rate that compares quite favorably with the silent visual reading rate for high school children of 250 wpm (Harris, 1947), motivated and experienced listeners would undoubtedly make efficient use of speech presented at this rate. The rapid decline in comprehension beyond 275 wpm clearly indicated the need for the development of an adequate training experience in order to make efficient use of word rates beyond 275 wpm.

The finding of relatively small losses in comprehension in the range from 175 to 275 wpm, followed by accelerated losses thereafter, has been replicated many times in subsequent experiments. Much research has been devoted to development of training methods intended to render speech at very fast word rates comprehensible (Foulke, 1964; Orr, et al., 1964). Although some progress has been made in this regard, we do not yet know how to make practical use of word rates much beyond 275 wpm.

That speech at an accelerated word rate would be acceptable to blind readers is attested to by the results of a survey of subscribers to the service offered by Recording for the Blind (Foulke, 1966). Most of the participants in

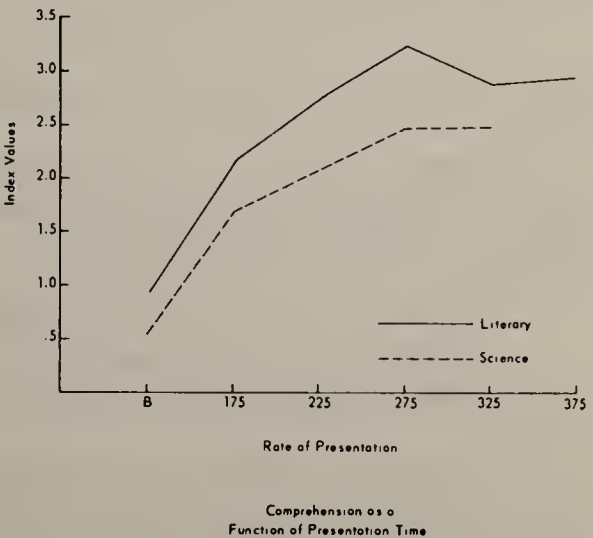


Figure 2

this survey indicated, after listening to samples of time compressed speech, that they would like to receive time compressed tapes or records. They disagreed about the compression in time that would be most desirable, but half of them expressed a preference for that compression resulting in a word rate of approximately 275 wpm.

In October of this year, a Conference sponsored by the Library of Congress, the University of Louisville, and the American Printing House for the Blind was held at the University of Louisville to review the current status of time compressed speech and to make recommendations for its future development. An immediate outcome of the Conference was the recommendation that a facility be set up to provide time compressed or expanded materials and to disseminate information about the process by which such materials are prepared. This recommendation has been acted upon. The Center For Rate Controlled Recordings at the University of Louisville, is now in existence and prepared to respond to requests for information or materials although, because of a budget that is at present severely limited, the capacity of the Center is still quite small.

CONCLUSIONS

Although there is a great deal of research to be done in connection with the production and use of time compressed speech, several conclusions seem warranted by present experience.

1. Speech that has been compressed in time by the sampling method appears to be most satisfactory, although this issue has not been clearly resolved and further research is needed.
2. Although further development in the technology underlying the compression of speech by the sampling method are needed, (especially developments involving the use of the computer), the electromechanical equipment now available is capable of producing moderately accelerated speech of satisfactory quality. This equipment is, however, still quite expensive and one very useful development would be an electromechanical compressor that could be marketed at a low enough price to make individual ownership feasible.
3. A blind reader, with little practice, can read satisfactorily by listening to material presented at a compression which, though moderate enough to preserve the comprehensibility of the material, is large enough to result in a valuable savings in time. For instance, if an hour's worth of reading material, recorded at 175 wpm, were accelerated to 250 wpm, it would be compressed in time to 42 minutes and a savings of this magnitude would, over an extended period of reading, become quite valuable.

A final, general conclusion is that enough is now known about time compressed speech so that, with appropriate limitations, it can safely be recommended for use by blind readers. The next step is to develop facilities capable of supplying, in adequate quantity, time compressed reading material to those blind readers who want it. If current planning is successful, the Center For Rate Controlled Recordings should initiate and stimulate such a development.

REFERENCES

- Enc, M. E. & Stolurow, L. M., A comparison of the effects of two recording speeds on learning and retention. New Outlook For The Blind, 1960, 54, 39-48.
- Fairbanks, G., Everitt, W. H., & Jaeger, R. P., Method for time or frequency compression-expansion of speech. Trans.: Inst. of Radio Engineers, Professional Group on Acoustics, 1954, Aug., 7-11.
- Foulke, E., The comprehension of rapid speech by the blind-Part II. Cooperative Research Project number 1370, Office of Education, Washington, D. C.: US Department of Health, Education, and Welfare, 1964.
- Foulke, E., Comparison of comprehension of two forms of compressed speech, J. Except. Children, 1966, Nov., 169-173.
- Foulke, E., Amster, C. H., Nolan, C. Y., and Bixler, R. H. The Comprehension of rapid speech by the blind. Exceptional Children, 1962, 29, 134-141.
- Garvey, W. D. The intelligibility of speeded speech. J. of Exp. Psychol., 1953, 45, 102-108.
- Goldstein, H., Reading and listening comprehension at various controlled rates. Teachers College, Columbia University Contributions to Education, no. 821. New York: Bureau of Publications, Teachers College, Columbia University, 1940.
- Harris, A. J. How to increase reading ability. New York: Longmans, Green & Co., 1947, 449.
- Harwood, K. A. Listenability and rate of presentation, Speech Monogr., 1955, 22, 57-59.
- Klumpp, R. G. & Webster, J. C., Intelligibility of time-compressed speech., J. Acoust. Soc. Amer., 1961, 31, 265-267.
- McLain, J. R. A comparison of two methods of producing rapid speech. Int. J. Ed. Blind, 1962, 12, 40-43.
- Miller, G. A. & Licklider, J. C. R., The intelligibility of interrupted speech., J. Acoust. Soc. Amer., 1940, 22, 167-173.
- Nelson, H. E., The effect of variation of rate on the recall by radio listeners of "straight" newscasts., Speech Monogr., 1948, 15, 173-180.
- Orr, D. B., and Freidman, H. L. Research on speeded speech as an educational medium. Project report number 7-48-7670-203. Washington, D. C.: US Department of Health, Education, and Welfare, 1964.
- Scott, R. J., Temporal effects in speech analysis and synthesis., Dissertation, University of Michigan, 1965.

FOOTNOTES

- ¹The successor to the Tempo Regulator is the Eltro Information Rate Changer sold in this country by Gotham Audio Corporation, 2 West 46th Street, New York, New York, 10036.
- ²A detailed description of the means by which such variation is accomplished, is beyond the scope of this paper. Those interested in such a description are referred to the 1954 article by Fairbanks, Everett and Jaeger (See References).
- ³Dr. David Orr, American Institutes of Research, 8555 - 16th Street, Silver Spring, Maryland 20910.
- ⁴Dr. Emerson Foulke, Department of Psychology, University of Louisville, Louisville, Kentucky 40208.

"True adjustment is not resignation to blindness; it is not compliance with everything that may be suggested; it is not contentment with things as they are; it is not even the ability to remain successfully employed . It might rather be defined as the attitude which enables the blinded person, in accordance with his own individual nature and capabilities, to face the fact of his blindness, admitting its severity without minimizing or exaggerating it; to do everything possible to acquire the substitute skills and knowledge needed; to have and to show the same emotions as before blindness; to mobilize his inner strengths around himself rather than around his blindness; to return as a whole personality to the society from which he came, integrally a part of that society, not making use of his physical defect as an escape or defence for himself or as either treacle or a club for those around him."

Reverend Thomas J. Carroll

THE ENJOYMENT OF THE ARTS

Another Aspect of Rehabilitation

By Mary E. Switzer*
Commissioner of Vocational Rehabilitation
Department of Health, Education, and Welfare

Art is the one form of human energy in the whole world which really works for union and destroys the barriers between man and man. It is the real cement of human life; the everlasting refreshment and renewal.

John Galsworthy

Although the "aesthetic experience is one of the most vivid and moving forms of human activity,"¹ it is all too seldom recognized as an experience necessary to the development of an individual's full potential for life. Almost never is this aspect of the human need given any consideration by workers in the various helping professions, whose primary duty is serving people in trouble, and helping them to achieve productive lives. Public programs, particularly, seem vulnerable in this regard.

Although hardly a day goes by that we do not see some story of children and young people actually engaged in the creative process of painting, the theater, music or sculpture, and although the development of schools of art in our colleges and universities is a growing trend, we have tended in public programs to consider any emphasis on, or involvement of our programs in an adventure with the arts as irrelevant, or at the very most of low priority. And yet, our Presidents have not hesitated to reflect on the essential place of the arts, and through them the importance of creative and aesthetic experience in the totality of American life.

President Kennedy had this to say when he established the Advisory Council on the Arts in June, 1963:

The Government has a responsibility to see that this important aspect of our lives is not neglected. The concept of the public welfare should reflect cultural as well as physical values, aesthetic as well as economic considerations. We have agencies of the Government which are concerned with the welfare and advancement of science and technology, of education, recreation and health. We should now begin to give similar attention to the arts.²

*Assisted by Nancy Bereano

And I would add another dimension—the integration of the creative and aesthetic experience into these "non-aesthetic" programs.

In another context, President Kennedy wrote:

Both Roosevelt and Lincoln understood that the life of the arts, far from being an interruption, a distraction, in the life of a nation, is very close to the center of a nation's purpose—and is a test of the quality of a nation's civilization. That is why we should be glad today that the interest of the American people in the arts seems at a new high.³

George Biddle, the distinguished American artist said of President Franklin Roosevelt, "...he had a more clear understanding of what art could mean in the life of a community—for the soul of a nation—than any man I have known."⁴

President Lincoln could stop in the middle of the Civil War to dedicate the newly-completed Capitol Dome with the bronze goddess of Freedom on top—and in answer to those who found much to criticize in diverting labor and money from the prosecution of the war, say: "If people see the Capitol going on, it is a sign that we intend this Union shall go on."⁵

In the pursuit of excellence in whatever we do, those responsible for public programs of service search deeply for aspects of community life to quicken understanding and stimulate those we serve to develop every sense to the fullest. To quote President Kennedy again:

A need within contemporary civilization, a hunger for certain values and satisfactions, appears to be urging us all to explore and appreciate areas of life which, in the past, we have sometimes neglected in the United States.⁶

As the museums of the country in this affluent age have found millions of dollars to purchase a Rembrandt, a Goya, or a da Vinci, it has been next to impossible to convince their governing bodies, even the publicly supported ones, that all of the public has a right to enjoy their holdings. Notable exceptions to this generalization are described in this paper.

And so in this moving scene of today and tomorrow, we look to institutions and experiences out of the normal flow to stimulate and excite us as individuals and public servants to make the most of what lies all about us.

In the program of vocational rehabilitation, every possible encouragement is given to individuals who have talent in the arts, and the record of achievement in painting, commercial art, drafting, designing and similar pursuits is impressive. Exhibits of the work of such people are commonplace in many communities and in national meetings.

We are concerned, in addition to the actual participants—and they are not only in the graphic arts, but also in music and the theater—with seeing that the great audience eagerly sharing a delight in the arts includes our handicapped citizens. It may be observed that the enjoyment of our artistic accomplishments knows no barriers—that individuals of all trades and professions,

of all ages and in all parts of the nation are part of the great and growing audience. But, are they all?

If you have to climb a high flight of stairs to a concert hall and are in a wheel chair, hearing the symphony "in situ" is denied you. If you are deaf, a talking picture—a movie—is only barely understandable. If you are blind and a museum has only pictures, the aesthetic experience through the eyes is denied you. If a museum has a fine collection of sculpture and it can only be enjoyed by looking, everyone loses, for some art objects are truly what Paul Barron calls "tactiles" and can only be fully enjoyed by the sense of touch.

President Johnson stressed this aspect a number of times when he was transmitting the proposal for the National Foundation for the Arts and Humanities, and later when he signed the bill establishing the Foundation:

Pursuit of artistic achievement, and making the fruits of that achievement available to all its people, is among the hallmarks of a Great Society. . . .government can seek to create conditions under which the arts can flourish through recognition of achievements, through helping those who seek to enlarge creative understanding, through increasing the access of our people to the works of our artists, and through recognizing the arts as part of the pursuit of American greatness.⁷

The National Foundation on the Arts and Humanities has, during its brief existence, demonstrated its interest in many forms of creative expression: the theatre, music, dance, poetry, literature, painting and sculpture have all benefitted. But the entire field of government support and encouragement of the arts is so new, that special attempts must be made to reach those people whose disabilities limit their enjoyment and participation in various cultural experiences.

When it was first suggested to the Vocational Rehabilitation Administration that an effort be made to persuade the museums of the country to open their collections for the enjoyment of the blind and their sighted friends, so that together they could experience beauty through the sense of touch, only a few leaders saw the possibilities of such a program. Those who appreciated what a forward-looking development it would be to involve the museums in extending their programs in this way saw, too, the tremendous advances in public understanding of the problems of blindness that could be made in a community sponsoring such an exhibit.

It was in 1956 that the first step in this direction was taken by the Vocational Rehabilitation Administration in granting a Research Fellowship to Allen H. Eaton to put together a collection of objects of beauty, develop a plan for their display, and write an interpretive essay on beauty experienced through the sense of touch. With the publication of Beauty for the Sighted and the Blind in 1959, we had our inspiration. The results of this inspiration to date are those described in the second part of this paper.

Idea For Repertory Theater For Deaf

It is interesting to observe that an awareness in one field often stimulates and sharpens awareness in another. For example, at about the same time that

Mr. Eaton was working on his book, Ann Bancroft was re-creating the story of Helen Keller's entry into the world. In the course of studying many aspects of deafness and blindness, and in struggling to understand the "sign language" by which many of the deaf communicate, she saw a performance of Othello given by the deaf players at Gallaudet College. This play was acted out in the sign language.

The quality of the performance so impressed Miss Bancroft and her director, Arthur Penn, that they conceived the idea for a repertory theater of the deaf with important dual objectives. A new theater form would be created and in so doing would provide opportunities for deaf actors to carry their message to a larger public. Secondly, new vocations would emerge from this effort, opening interesting and fresh employment possibilities for a group of disabled people more under-employed than most.

The idea went through many changes before becoming a reality. Support of such an attempt inevitably raised questions of Federal support of the theater before passage of the legislation creating the National Council on the Arts. Finally, however, in 1966, Miss Bancroft's dream became a reality through the formation of the National Theater of the Deaf.

VRA Providing Large Portion of Funds

Operating under the aegis of the Eugene O'Neill Memorial Foundation, an endowment organization created to provide a living testimonial to the excellence and excitement of theater generated by the late American playwright's work, the National Theater of the Deaf is a boldly innovative and stimulating undertaking.

The Vocational Rehabilitation Administration is providing a large portion of this permanent non-oral repertory theater's funds for the first three years of operation.

Increased communication between the deaf and hearing is one of the Theater's primary goals. For this reason, the dozen actors within the company will perform for both deaf audiences and those with normal hearing. Differing in approach from the many deaf acting groups functioning in this country, the National Theater will do more than "translate" a spoken script into sign language. It will attempt, instead, to create an original, meaningful theatrical expression through the combination of hand movement, mime, music and dance.

To further the end of both evolving a new theater form, esthetically significant in its own right, and of increasing vocational rehabilitation opportunities for the deaf, exploratory work with the utilization and effect of colors and vibrations is being conducted. The O'Neill Foundation is having a drum-like sounding board stage developed to take full advantage of the actors' residual hearing abilities.

In addition to establishing a deaf repertory group, the O'Neill Foundation is forming a school for deaf performers, playwrights and technicians. The school will not only cultivate potential talent for the acting company, but will also train the participants to work with schools and organizations for the deaf in upgrading their theatrical attempts.

Many well-known theater personalities as well as specialists in work with the deaf have joined forces to produce the most professional approach possible. Last summer, the theater group from Gallaudet College (the only liberal arts college specifically geared to the needs of the deaf in the world) presented several performances of its production of *Iphigenia in Aulis* at the O'Neill Foundation Theater in Waterford, Conn. An audience of invited people from the theater, professionals in the field of deafness and local residents responded most favorably to the vibrancy of the production. This was but the first step in showing that a wider audience exists for this specialized entertainment than had been previously thought. We are gratified that a VRA planning grant made the Gallaudet-O'Neill Foundation exchange feasible.

On April 2, 1967, the National Theater of the Deaf made its first official appearance on a nation-wide television documentary demonstrating both work in progress and the company's hopes for the future. It is evident that this troupe represents yet another way in which the disabled can make significant contributions to the larger society while providing outlets for hitherto untapped talents.

A DIFFERENT PERCEPTION OF BEAUTY

Our overall concern for the aesthetic well-being of our clients, this involvement with the whole man—with his mind, his body and his spirit—has been demonstrated most fully in our work with the blind.

"A blind man studies by his touch that relationship required between the parts of a whole to enable it to be called beautiful."⁸ Denis Diderot, the 18th century philosophe, has captured in that one sentence the very essence of one of the most exciting and challenging current trends in work with the blind—the planned appreciation of beauty. How truly "enlightened" Diderot was to understand that sight is only one means of perceiving the world, that the blind should not be cut off from many pleasurable encounters with beauty merely because they "see" with an organ other than their eyes.

There probably exist as many definitions of "beauty" as there are people who attempt to define it. The one seemingly incontrovertible fact that follows from this is the highly personal and subjective nature of beauty. Surely this elusiveness places the burden for seeking meaning on the eyes—or in the hands—of the individual beholder. Just as there are sighted people for whom the concept and enjoyment of beauty is unimportant, so, too, there are those who are blind who care little for these aesthetic experiences. The distinction must be made not between those who have eyesight and those who do not, but rather between those who care and are sensitive and those who are not, regardless of their means of perception.

A desire to heighten the awareness of beauty in the blind awakens us to ways and means of conveying aesthetic significance through touch, hearing, smell, emotion and intellect. This is a cause for the bold and the dedicated.

And it is for those who truly believe that the aesthetic is not something "extra" in civilization, but an essential part of the whole man. The late Allen Eaton was such a man.

To Mr. Eaton and his inspiring book, Beauty for the Sighted and the Blind, the greatest credit must be given for stimulating an evergrowing movement to extend the world of beauty for the blind. He fervently believed that the blind have as great a need for beauty in their lives as the sighted; that the blind can comprehend and enjoy this beauty through means of perception other than the eyes; and most important, that the sighted and the blind can both derive a deep sense of satisfaction and fulfillment through the mutual sharing of their experiences.

Chose 40 Examples of Handicrafts

Mr. Eaton was, in his own words, "concerned with beauty for those who perceive it in different ways, through different senses yet without difference in the quality of the feeling evoked, so that shared beauty becomes a communication of a high order."⁹

For his Collection of Objects of Beauty for the Sighted and the Blind, Mr. Eaton chose some 40 examples of handicrafts, man-made objects serving a utilitarian or decorative purpose. He established several criteria in selecting the objects included in his exhibit. They reflect his overriding concern for what he thought of as the primary objective of such a collection—the exchange of ideas and emotions between the sighted and the blind.

The objects must "combine the elements of pleasant form, texture and color"¹⁰ (the latter to enable the sighted to obtain maximum satisfaction); they must be small enough to be comfortably held; they must be durable enough to withstand repeated handling. Ranging in time from a fist-axe of the late Stone Age to a modern Finnish glass bowl, and representing a wide variety of materials with their accompanying properties of texture and temperature, the handicrafts were gathered from all over the world.

If Mr. Eaton was among the most vocal contemporary spokesmen for the value of beauty to the blind, and if he added the special emphasis of blind and sighted sharing their experience of beauty, he was certainly not the first to articulate the need for organized exhibits. It is, in fact, extremely interesting to note just how early in the development of concern for the blind the use of grouped tactile objects was instituted.

Private Schools Formed Collections

Research shows us that it is possible to trace the beginning of recorded planned museum work for the blind to one Johann Wilhelm Klein, who, in the first years of the 19th century, prepared a collection of teaching models for the blind of Vienna. Until its destruction during World War II, the museum that he founded contained over 5,000 specimens devoted to all phases of the education and history of the blind. By 1900, most of the nations in Western Europe had made considerable progress in similar museum work.

During the 1870's, Michael Anagnos, as Director of the Perkins Institution in Watertown, Mass., began that school's now extensive collection of objects for study with an assortment of anatomical models brought from Germany. Many other private schools for the blind formed their own collections in the

years that followed, until the use of organized tactile objects became an indispensable part of the teaching process for blind children.

It was not until 1909, however, one century after the beginning of the Viennese collection, that a public museum in the United States undertook a program of instruction for the blind. In that year, the American Museum of Natural History instituted a series of lectures given by specialists in various fields for invited groups of blind persons. Today this museum still encourages the visits of groups of the blind to selected "touchable" exhibits, although there is no formal exhibition program.

Of course, anatomical models are generally not thought of as "beautiful," and objects primarily having an instructional function may leave much to be desired aesthetically. There is an enormous difference between the earlier museum work in Vienna with its comparable elements in the schools for the blind, and the present day museum projects concerned with the appreciation of beauty. The first existed almost solely for didactic purposes; the latter seeks to stimulate the higher sensitivities of the blind. The older exhibits were for the exclusive use of the blind; the current work attempts to involve both the blind and the sighted. It is imperative, therefore, for us to take a broader view and look at the work of some of the "art" museums. In this way, we can better see the fruition of the goals of those people and institutions who share Mr. Eaton's beliefs.

Not Enough Work for Definitive Answer

Among the most interesting factors to be considered in this perusal are the varying kinds of exhibits that have thus far been arranged. The items selected for inclusion and the methods chosen for setting up the exhibit provide a good indication of the underlying philosophy of the institution responsible for its establishment.

Should regular museum collections be opened to the blind as just another segment of the museum-going public? Should the blind have exhibits prepared for their use only, with both the articles included and the design of the exhibition specifically geared to their needs? Should the blind and the sighted view the exhibits together so that an interchange of ideas and reactions is facilitated, as Mr. Eaton proposed?

Not enough work has been done in this area to pinpoint a single definitive answer. Moreover, there may not be just one "right" way of doing things. There seems to exist a basic consensus, however, among those museum people who have made special attempts to serve the blind as to what arrangements the blind themselves prefer. The "look but don't touch" attitude, which all too frequently prevails in a museum's exhibitions for the sighted, is obviously untenable when applied to the blind.

VRA Staff's Expertise Also Utilized

It is nonetheless true that priceless objects of art cannot be handled by the layman if they are to be preserved, even if it means excluding the blind from an intimate knowledge of these works. It consequently takes careful planning

and much imagination to arrive at a satisfactory compromise, one that enables both the curator and the blind visitor to feel relaxed.

It has been very exciting for us at the Vocational Rehabilitation Administration to have been able to take an active part in the early stages of recent exhibit planning for the blind. This we have done both through the awarding of grant monies and the utilization of our staff's expertise. As previously indicated, Mr. Eaton was able to finish his memorable book while on a VRA Research Fellowship. In addition, what is perhaps the most meaningful museum effort to date has been undertaken at the North Carolina Museum of Art in Raleigh through the encouragement and guidance of a VRA-sponsored pilot study. In March of 1966, this museum opened the Mary Duke Biddle Gallery for the Blind, building on the knowledge and experience gained during the initial study period.

The Gallery's inaugural exhibit consists of 63 pieces of sculpture, from the Stone Age through the 20th century, which give insight into the historical development of art. Many of the great masters, including Degas, Maillol, Moore and Rodin are represented. What more appropriate work than the Rodin Hand, one might ask, could have been picked as the symbol of the exhibit? A favorite piece in the collection is a beautifully formed cat—sitting proud and tall—from an Egyptian tomb of 2,000 B.C.

It is especially noteworthy for us to consider the results of the pilot study since they tell a great deal about the needs and abilities of the blind to respond to beauty. What is more, they supply the basic information required for successfully developing an exhibit for the blind.

Care Chosen For Variety of Media

During the course of the pilot project, groups of selected students from the North Carolina State School for the Blind were exposed, not only to the pieces of sculpture, but to the entire cultural and historical context in which they were created. It was clearly shown that the blind could comprehend this type of extensive survey, that the objects could be enjoyed through the immediate sense of touch and in their larger cultural setting. In fact, there was a noticeable ability of the blind to relate their tactile experience with art to other areas of learning.

The objects for exhibition were finally selected with intellectual, aesthetic and tactile considerations in mind. Care was given to choose a variety of media whose surfaces radiated varying temperatures and tactile sensations.

It was also observed that reproductions were unsatisfactory, both textually and psychologically. As Mr. Charles W. Stanford, Curator of Education and director of the exhibit, pointed out, "the purely psychological attitude of having in one's hand an original object, whether it be 6,000 years old or ten years old, is vastly important and cannot be overestimated."¹¹

The observations made during the pilot study indicated that the blind would derive the greatest benefit from a gallery specifically designed with their needs

in mind. The sighted are allowed to use the Gallery daily for a limited time only. An exhibition area was created, consequently, that allows the blind visitor to be self-sufficient in his exploration of the art works.

VRA and the North Carolina Museum together evolved a set of guidelines delineating just what provisions must be included in planning the exhibit to insure the convenience and comfort of the blind. A relief map showing the Gallery's layout; a mounted braille explanation of how to use the Gallery; specially constructed display counters enabling accessible but not precarious handling of the objects; a railing to facilitate the blind person's movement through the exhibit; braille labels for each article; pleasant flooring materials; a braille catalogue analyzing the exhibit in some depth; a library-study area including the first braille art history books, transcribed and donated through the auspices of the Library of Congress; and trained docents, were all agreed upon and are being utilized to give the blind as full an appreciation of the exhibit as possible.

The docents enable the blind visitors to add deeper dimension to their museum experience through the exchange of the information and impressions so highly prized by Allen Eaton. The inclusion of the library area and the planned series of future seminars to provide the opportunity for further discussion and historical study are elements of the project that would certainly please him.

VRA is extremely proud to have provided much of the impetus for this project. It is hoped that it will reach many of the 11,000 blind children and adults in North Carolina, and will be only the first of many similar projects in other cities and states. Indeed, one of the most significant ramifications of the North Carolina project is the realization of a museum's function—its responsibility to serve the public. This, of course, is especially true of a state supported museum. The public institution is obligated to meet the needs of the blind just as it must provide services to the non-handicapped. Not to provide services to the blind is, in many ways, an abdication of this responsibility.

The other project with which we are directly involved is also expected to have far-reaching consequences in the development of future exhibits for the blind. It is believed that a VRA grant to the Smithsonian Institution in Washington, D.C. will facilitate the evolution of methods and techniques that museums throughout the country can utilize in establishing exhibits for the blind. This "know how" may very well be of greater importance than the final exhibit itself.

It is easy to acknowledge the fact, although we do not always like it, that museums are a rather specialized part of life. Millions of people in the world never go into a museum and are not interested in doing so. However, it is my very firm conviction that much more enjoyment of what is in museums can be had by many more people; especially by our handicapped people, if methods are found to take advantage of the way in which they can best secure this enjoyment.

To this end, the initial Smithsonian pilot demonstration was undertaken in June of 1966. A NASA-prepared exhibit, showing the history of flight in the United States from the Wright brothers to the astronauts, and a small collection

from the Smithsonian's Textile Hall, illustrating the development of textiles from raw material through finished product, were set up in the Arts and Industries Building.

Prefer Staff Members Answering Questions

The NASA exhibit utilized scale models to give an insight into both the scientific concepts of flight and space, and specific aviation vehicles. These objects were accompanied by recorded description and explanation. The Textile Collection experimented with representative scaled models of the Smithsonian's regular exhibition. Visitors followed tour guides around the area, handling the models corresponding to the larger exhibits on permanent display.

The data collected from these demonstrations shows that blind museum-goers enthusiastically prefer having staff members answer questions rather than listening to taped explanation. What is more, to encourage the shared experience between the sighted and the blind, the Smithsonian is planning to integrate these special exhibits throughout the museum complex instead of maintaining a separate gallery.

Another pioneering museum is the Salt Lake Art Center in Salt Lake City, Utah, an institution dedicated to the exhibition of the work of contemporary artisans and craftsmen. Building on Mr. Eaton's experience and observations, the Center has adopted a somewhat different approach in its planning for the blind. In this Center, according to its Director, "the blind were to be invited to regularly scheduled exhibitions as simply another segment of the community, one hitherto excluded. They would be encouraged to enjoy objects of fine arts and crafts not selected for exhibition on the basis of their potential appeal to the blind, but chosen by an outside juror employing the usual criteria."¹² In other words, whatever works are chosen for display in the Center because of their artistic merit would be shown to the blind for the same reason. Since the Center's Program for the Blind was inaugurated in November of 1964, groups of blind persons have been able to visit two or three sculpture and craft exhibits each year.

Of course, the very nature of the objects included in a crafts exhibit lends itself to examination and enjoyment by the blind. As the Director pointed out, "one advantage of the fingers over the eyes is the ability to encompass a form, to examine two sides simultaneously. . . .The beauty of three-dimensional form, the tactile quality of surface, varying temperatures, resistance of surfaces to the fingers and the aroma of certain woods and fabrics"¹³ all help to stimulate the kind of enjoyment to which the blind are particularly sensitive.

Published in Printed and Braille Edition

Like the North Carolina Museum and the Smithsonian, the Salt Lake Art Center relies heavily on the services of well-trained docents who are able to guide the blind intellectually through the exhibition. A descriptive catalogue of selected items from each exhibit is published in both a printed and a braille edition.

Twentieth century art has produced extensive experimentation with new forms and methodologies. One noticeable trend places increasing emphasis on

the non-visual aspects of artistic creation, with tactile experience becoming an end in itself. The ramifications of this kind of exploration hold a wide range of possibilities for aesthetic enjoyment by the blind.

A teacher in Montana, for example, has created an art form which he calls "tactiles," the adjective used as a noun much in the same way as Alexander Calder's work has introduced "mobiles" and "stabiles" into the language. The art object must be explored manually to understand its meaning and it is the sensations and thoughts arising from the touching that create the tactile's aesthetics. South Sea Island Image is such a tactile. "One hand presses a mound of bulk cotton. Playing over the back of this hand is a man-made zephyr—accomplished by rheostatically reducing the blow and heat of a hand hair dryer. Induced is a wisp of the escapist's wistful chimera."¹⁴

"Touch Me," the exhibition beckoned. And like another famous youngster who found adventure by following a similar invitation to "Eat Me," the children at the Junior Gallery of the Houston, Texas Museum of Fine Arts are discovering new worlds through the use of their hands. This particularly rewarding, well-planned, beautifully laid out exhibit is the result, in part, of the private and public responsibilities of Mrs. Susan McAshan. As the mother of a blind youngster and a member of the board of the Rehabilitation Center in Houston, Mrs. McAshan realized the void existing in the cultural facilities available to her child and the many other children with similar disabilities. By making an excellent collection of sculpture and pottery available to a hitherto excluded and untapped museum population, and by inviting artisans to demonstrate their crafts with the children feeling the creative process as it occurs, the Houston museum is performing an invaluable service.

We are becoming aware of the increasing variety of sources sparking an interest in museum projects for the blind. The Vocational Rehabilitation Administration, private institutions, state-supported museums, individual philanthropists, specialized schools for the blind, and now, the Office of Education has joined the ranks of the concerned.

Using funds given to the several states under the Elementary and Secondary Education Act of 1965, the Florida State School for the Blind in St. Augustine has been awarded a grant to hire a full-time curator responsible for establishing a "Touch and Learn Center." This Center is concerned with the "aesthetic" in only the most general sense of the word since the objects selected for the collection need not be beautiful at all. They are picked to show the blind what the sighted see in their everyday lives.

Although this project is much more in keeping with the Vienna School rather than the "shared beauty" approach, it is encouraging to see the Office of Education involved. Perhaps this kind of support can be the jumping off point for a heightened interest in the aesthetic needs of the blind.

Even Cursory Glance is Place to Start

It was not my desire to examine in this article every existing museum program for the blind. There are several that we learn about, as mentioned, through their involvement with VRA. We try to leave our philosophical imprint on them. Others come to our attention through the art journals. The reports of friends and interested people add to our knowledge further. But all of these sources provide only a partial listing.

And what is to be gained by knowing what museums have programs and what museums do not? Surely the quality of the programs cannot be determined just by an awareness that they exist. But even a cursory glance is a place to start, to educate, to instill the importance and vibrancy of this concept into as many people as possible.

The art of communication must be cultivated to be meaningful. The blind and the sighted have a great deal to learn from one another and the exchange can only benefit both groups. As Shakespeare's King Lear says to a blinded Gloucester, "a man may see how the world goes with no eyes."¹⁵

And so he can.

FOOTNOTES

¹William Roerick, Salt Lake Art Center's 4th Annual Utah Designer-Craftsmen Exhibition Catalogue, November 1964.

²John F. Kennedy, "Statement by the President upon establishing the Advisory Council on the Arts, June 12, 1963," Public Papers of the Presidents (Washington: United States Government Printing Office, 1964), p. 474.

³John F. Kennedy, "The Arts in America," article originally appearing in the December 18, 1962 issue of Look magazine, Public Papers of the Presidents, 1963, pp. 904-905.

⁴Ibid., p. 904.

⁵Ibid.

⁶Ibid., p. 905.

⁷Lyndon B. Johnson, Remarks made upon transmitting the Administration's recommendations for a National Foundation on the Arts and Humanities to the Special Subcommittee on Labor in the House and the Special Subcommittee on Arts and Humanities in the Senate, March 10, 1965.

⁸Denis Diderot, "Letter on the Blind for the Use of Those Who See," Early Philosophical Works, Margaret Jourdain, ed. and trans. (Chicago: Open Court Publishing Company, 1916).

⁹Allen Eaton, Beauty for the Sighted and the Blind (New York: St. Martin's Press, 1959), p. 4.

¹⁰Ibid., p. 66.

¹¹Charles W. Stanford, "A Museum Gallery for the Blind," Museum News, XLIV (June 1966), 21.

¹²James L. Haseltine, "Please Touch," Museum News, XLV (October 1966), 12.

¹³*Ibid.*, p. 16.

¹⁴Paul Barron, "Tactiles," Design, LXVI (September-October 1965), 25.

¹⁵William Shakespeare, King Lear, Act IV, Scene 6, Line 154.

"... I shall finish with one bit of personal philosophy. I hold myself to be a part of a reasoned and loving creation. Whatever of that love and reason is in me is to be rescued from false and destructive elements, and destructive elements, and dedicated to God for the good of all things. Any handicap, including blindness, will hinder, but cannot obstruct, the genuine effort of the person who is capable of love and reason. To make this statement something better than a platitude or pious utterance is my assignment."

Louise D. Cowan

THE PROS AND CONS OF AN EYE INSTITUTE

By T. D. Duane, M.D.

Nineteen sixty-seven could well be the "Year of Decision" for ophthalmology. To be decided is whether visual research and training should go it alone or whether these activities should continue in their traditional role as a subsidiary of the National Institute of Neurological Diseases and Blindness, better known as the NINDB. Undoubtedly in 1967 the eyes will have had it, one way or another.

Today, it is impossible to be informed about scientific and socio-economic matters and continue to remain in a superior state of neutrality. Any communist leader will testify that education, and especially the type of education, leaves one biased. Therefore, I cannot pretend to exist in a state of pure objectivity when considering the pros and cons of an Eye Institute any more than those who will take violent exception with my statements and conclusions. However, all of us, in our less emotionally wrought moments, must honestly admit that such problems have many facets and that probably there is no simple black or white, true or false, yes or no answer as to the advantages and disadvantages of a separate Eye Institute. If the answer were axiomatic, either action would long since have taken place or patently there would be no need for discussion. Since action has not been taken and since discussions are going forward throughout the nation, there must be several points of view concerning the relative merits of the proposal. It is these I wish to elucidate, or at least to enumerate.

It has been stated that the arguments may be lumped into several distinct categories, namely scientific, political and economic. But here, just as with most challenges facing the nation, for instance, those of defense, space, and atomic energy, the categories overlap and tend to become inextricably intertwined. However, in general an attempt will be made to isolate the scientific arguments and the political arguments which are proposed for and against the Eye Institute.

Therefore, with full recognition that the writer is not neutral and that the issues raised all have scientific and political overtones, the reader may judge for himself which side he will choose when the matter comes before his delegate in Congress.

At issue is this: should a separate National Eye Institute be created within the NIH, thus separating visual research and training from the NINDB?

1. Against the Institute: The eye is a sensory organ. It is a forward extension of the central nervous system and despite its peculiar diseases and malfunctionings, it is part and parcel of the central nervous system. Therefore, there

is no more justification for considering it individually than there is to consider an institute for, say, the sciatic nerve or the spino-thalamic tract.

For the Institute: The retina is indeed a forward extension of the central nervous system but the eye consists of much more than the retina. Modifications in the eye have evolved over millions of years and it is now a unique organ. Ocular mechanisms and diseases are without parallel in the human body and hence can be appreciated only by those who work exclusively with the eye. Non-ophthalmologists have only the most superficial appreciation for, and empathy with, the vicissitudes of patients suffering with diseases such as glaucoma, cataract or corneal opacifications. The outsider's framework of reference places such entities in their improper perspectives.

2. Against the Institute: The eye is a relatively small organ. Few of its diseases are fatal. Even fewer are of epidemic nature. Placed alongside the devastating and all encompassing neurological diseases such as cerebral palsy, poliomyelitis, muscular dystrophy, spinal meningitis or brain tumors it would seem that eye diseases, though somewhat debilitating, are scarcely of paramount importance. In other words, as a nation the neurological diseases are much more of a problem in a socio-economic or scientific sense than are ocular malfunctionings.

For the Institute: This line of argument is fallacious. Facts do not support such statements. The number of eye patients admitted to hospitals for treatment in a national sampling was found to be somewhere in the neighborhood of ten percent. There are over one million blind in the country today. It has been estimated that over 50 percent of the population have some form of eye trouble. In some 3 1/2 million the difficulty is of a serious nature. Try and tell the hundreds of thousands of your fellow citizens suffering with glaucoma or diabetic retinopathy that their eye disease is of minor consideration from a national standpoint. Or, do as the Gallup organization did, ask the man in the street what type of catastrophic health problem he fears most. He will reply: cancer, number one; blindness, number two. No mention of neurological diseases.

3. Against the Institute: Assuming there were valid reasons for increasing emphasis on ophthalmic research and training why must there be a new Institute to accomplish this goal? One can offer just as sound arguments for support of research around all the organs in the body or around all diseases which afflict mankind. Endless decimation of the NIH would render that organization weak and ineffective. If ocular research is suffering, could not the same remedies be applied just as well within the National Institute of Neurological Diseases and Blindness as could be accomplished outside its jurisdiction. What about ear, nose and throat, and what about neurosurgery? These specialties have as much right to go it alone as ophthalmology. This precedent and pattern of breaking away could go on endlessly to the detriment of the mission outlined for the National Institutes of Health.

For the Institute: The goal of offering significantly more support to eye research and training is not likely to arise within the present structure of the NINDB. At least it has not arisen in the last 16 years. The administration there is controlled by individuals trained as neurological scientists. There is a galaxy of internationally recognized neurological experts represented on

the full-time staff. However, comparably recognized ophthalmic specialists are conspicuously missing. This is not to say that ophthalmology is consciously suppressed by those in authority. It simply plays a minor role in their philosophy. Ophthalmic research is equated by them with such subdivisions of their discipline as pediatric neurology and neuro-radiology. This is understandable but not laudable. It is not suggested that an ophthalmologist should be made Director of the entire NINDB. We do not want to lead them any more than we want them to lead us. What is proposed is that ophthalmology should answer directly to the top of the NIH complex and not through intermediaries whose chief interests are in the neurological sciences.

Furthermore, there is precedent for developing new institutes within the NIH complex. There have been two new ones since 1960. It seems that when the genuine needs for realignment become obvious the Congress responds. Anyone who says that these precedents can mushroom into Institutes for fallen arches or hangnails either underestimates his elected representatives or his fellow voting citizens.

4. Against the Institute: With the same amount of money, degree of effort and expertise, the nation could well perform an uplifting of ophthalmology within the present NINDB aegis and with a great deal less confusion, duplication and realignment as would ensue with the evolution of a new Institute. After all, there are outside panels of experts who control the NINDB's support of eye research and training just as for all other research and training. The same format could exist in a new Institute, so why bother.

For the Institute: It is a fundamental law of cellular biology that growth depends upon division. A single cell cannot expand infinitely to become an entire organism. Eventually a state of diminishing returns and efficiency develops. The same principles apply to businesses and industries and they also apply to ophthalmic research and training. Whether calculated or not, during the 16 years since the inception of NINDB support, monies allocated to eye research and training have remained almost absolutely fixed at 17 percent. There are pitifully few ophthalmic researchers with Research Career Awards. There are relatively few information centers concerning ocular problems. Again, this is not deliberate on the part of NINDB. Nevertheless, it is consistent. I personally know and respect the top men and ladies in NINDB. They are highly capable, devoted, intelligent, responsible and thoroughly honest individuals who possess almost a missionary zeal in their approach to their tasks. Typically they have gone out of their way to tell me that, though they fundamentally disagree with me in this matter, that my right to speak as a private citizen would not in the least jeopardize my laboratory's chances for support from their resources. I trust and respect them implicitly. In spite of my stated admiration, on the basis of their scientific orientation, I still recommend that ophthalmology get out from under domination by non-ophthalmologists. A parallel comes to mind. A friend of mine nurtured a basic scientist in his department of ophthalmology. The investigator in question had been recognized throughout the world by the few hundred researchers working in his field. In fact he is considered as the leader in this type of investigation. When time came for the department head to give his scientist an academic promotion, this action was opposed by an advisory committee of experts. Why did they oppose the promotion? Because the scientist in question was working in a special area of ophthalmic research about which they knew nothing. Was the committee viciously or politically inspired to

oppose the scientist or the wishes of the department head? No, they were simply uninformed about ophthalmology in general and ophthalmic research in particular, and why shouldn't they be? Their field is large enough and there appears to be a limit to one's knowledge and sympathies. Orientation is the key word. I submit that regardless of outside consultation at NINDB, one can never hope for proper perspectives in the allocation of funds for ophthalmology when decisions regarding the total budget are performed in the final instance by non-ophthalmologists.

5. Against the Institute: Ophthalmic research and training is not held back by NINDB. The simple matter of fact is that the number of respectable proposals which arise from within the ophthalmic community cannot pass muster when compared to those emanating from the neurologists or neurological scientists. Indeed, eye research and training is judged by eye specialists and not by neurologists.

For the Institute: Again, orientation, orientation, orientation. Agreed, ophthalmology is judged by ophthalmologists, neurology by neurologists, so is cardiology by cardiologists, neoplasm by cancer specialists, etcetera. But the ophthalmic researcher wishes to be judged on the scales in comparison with the other disciplines represented at the total National Institutes of Health. They do not wish to be thrown bones after the major allocations have been decided. Last year, some \$3 million in approved grants for visual research was not funded. Traditionally neurological sciences are predominantly academic. Neurology is a diagnostic specialty with limited outlets for therapeutics which, fortunately, are increasing all the time. For centuries it has attracted the scholarly type of individual into its folds. Ophthalmology, on the other hand, is primarily a "doing" specialty. Glaucoma is recognized and treated with medicine or surgery; cataracts are removed; retinal detachments are repaired; glasses are prescribed; infections are treated. It is only in the post-war period, thanks to NINDB, that teacher-investigators are combining clinical knowledge of eye diseases with search for causes.

Their infant, the academic ophthalmologist, is now mature and is ready to proceed under his own power. If they have spawned a giant, and hopefully they have, this fact should be faced squarely. It seems inconsistent to train teacher-investigators in the field of ophthalmology for 16 years, then perversely hold them in a state of suspended animation. This is somewhat akin to promoting a child's education, then telling him in his later college years that if he continues to proceed in the fields of his own liking, the parent will oppose him.

6. Against the Institute: The Department of Health, Education, and Welfare and its subsidiary units, including the National Institute of Neurological Diseases and Blindness, are all opposed to a separate Eye Institute.

For the Institute: Let us determine who is on record for this move. The Association of University Professors of Ophthalmology, which consists of every departmental head in American Ophthalmology, is unanimously behind a separate Eye Institute. The Association for Research in Ophthalmology has gone on record supporting this legislation, as has the Section on Ophthalmology of the AMA. Representative John E. Fogarty and Senator Lester Hill, the two most knowledgeable and influential men in Congress with regard to health legislation, are supporting bills to create a separate Eye Institute. The first such bill, introduced last year in the House by Honorable Fred B. Rooney, was

followed by 35 similar bills submitted by other Congressmen. In the Senate, an Eye Institute bill introduced by Senator Hill was co-signed by 50 other Senators within ten days. There is solid support for the Institute within the scientific and medical communities, and the Congress seems ready to act to move eye research into the mainstream of scientific progress. It would appear that those who oppose the separate Eye Institute, either within the HEW or the neurologists in the universities, have the burden on them to indicate why such a change is inadvisable. Certainly ophthalmology has stated its case.

It should not be inferred that a separate Eye Institute supporting visual research and training will overcome all obstacles which confront ophthalmology, whether they are scientific or political in nature. What should be emphasized is that the state of the art has developed to a level today wherein maximum return to the nation will ensue when those in command of the total budget for visual research and training are knowledgeable in and empathetic with the functioning of the eye in health and in disease. After seeing and hearing the evidence, the reader will have to make his own decision.

*"Pity not that light no longer fills
These eyes with shapes of suns and moons and stars,
And crisp young blossoms from an April field;
Nor that the birds no longer sing to me
Their gay cascades of gladness from blue heights,
Where all the voices of the winds are hushed.
I know the joys of full and active days –
The task well done, the goal I sought attained;
The keen delight of knowing that my deeds
Span future years, and bring to those who share
The desire for fuller living I have known,
The strength of faith, bright hopes for happiness."*

Robert Smithdas

THE INTERNATIONAL PROGRAM OF THE VOCATIONAL REHABILITATION ADMINISTRATION

By Joseph M. LaRocca

The Vocational Rehabilitation Administration and its predecessor agencies have crossed many frontiers since the public rehabilitation program was established more than 40 years ago. The newest of these frontiers is the vast array of activities which make up its international program.

This international program attracts tremendous interest and effort. Individuals and institutions are eager to participate in the program—many on a volunteer basis — because of the unparalleled opportunities it offers for advancing the cause and art of rehabilitation around the world and equally, if not more important, because of the unique opportunities it presents for achieving better understanding among the people of the world. Nations often are in conflict because of differences in political, economic and social structure. But the people of all nations desire life free of illness and disability. Hence rehabilitation is a powerful unifying force in the world community.

Scope of International Program

There are many facets to the Vocational Rehabilitation Administration's international program, the major ones being: the support of cooperative rehabilitation research and demonstration projects abroad; the interchange of American and foreign rehabilitation experts; the provision of research fellowships to qualified applicants for the investigation of specific research problems which can best be studied overseas; the training of foreign nationals in rehabilitation methods and techniques; the recruitment of American technicians for temporary assignment by the Agency for International Development and the United Nations to countries requesting technical assistance in rehabilitation; the preparation of position papers on rehabilitation for use of the Department of State and the official U.S. delegations to conferences conducted by the United Nations and its specialized agencies; participation in and support of international meetings and technical seminars in rehabilitation; and finally publication and the dissemination of rehabilitation literature to interested individuals and agencies around the world.

All of the above activities are carried out in cooperation with a host of organizations and agencies such as The World Rehabilitation Fund; The American Foundation for Overseas Blind; The World Council for the Welfare of the Blind; The International Society for the Rehabilitation of the Disabled; The American Leprosy Mission; The National Rehabilitation Association; The American Medical Association and associations of American medical specialists;

State Rehabilitation Agencies and State Commissions for the Blind; the United Nations and its specialized agencies; the Department of State; and hundreds of public and voluntary workshops, hospitals, universities and agencies. All of these organizations generously give their staff and resources to one or more of the international programs described here. Indeed, these programs could not be conducted without their assistance and cooperation.

Rehabilitation Research and Demonstration

The largest segment of the Vocational Rehabilitation Administration's international program is the development and support of cooperative rehabilitation research and demonstration projects in certain foreign countries. This part of the program is financed with U.S.-owned foreign currency, commonly referred to as counterpart funds, derived from the sale in those countries of United States surplus agricultural commodities. These counterpart funds are in excess of the amounts needed by our government to finance U.S. embassy and other primary United States requirements.

Cooperating Countries. The countries where the Vocational Rehabilitation Administration now has, or has had, an appropriation of counterpart funds and in which it has helped develop and finance cooperative projects are Brazil, Burma, India, Israel, Pakistan, Poland, Syria, the United Arab Republic and Yugoslavia. Beginning July 1, 1967, two new countries will be added — Ceylon and Tunisia.

Origin and Size of Overseas Research Program. The Rehabilitation Research and Demonstration Program was initiated by the Vocational Rehabilitation Administration in August, 1961, under the amendments to the Agricultural Trade, Development and Assistance Act which authorized the Vocational Rehabilitation Administration and certain other federal agencies to use counterpart funds for research abroad in their respective fields of interest on problems of mutual interest and concern to the United States and the cooperating foreign countries. In the first year of operation (1961), the Vocational Rehabilitation Administration approved and financed 13 projects. In the second year this number was tripled. By July 1, 1967, close to 125 projects will have been approved and placed in operation. Ten projects have been completed.

For fiscal year 1961, \$930,000 was made available for this program; \$1,372,000 for 1962; \$2,000,000 each year from 1963 through 1966; and \$3,000,000 for the present year. Counterpart funds requested for the new fiscal year which begins July 1, would enable the Vocational Rehabilitation Administration to approve about 25 new research and demonstration projects. This phase of VRA's international program has been so enthusiastically received in the cooperating foreign countries that a backlog of projects is rapidly building.

Purpose. The research and demonstration activities carried on under the foreign currency program are designed to supplement and complement the programs conducted within the United States under the Vocational Rehabilitation Act, as amended. The overseas programs enable us to benefit from the progress that other countries are making in dealing with vocational rehabilitation problems, many of which are similar to those which confront us in the U.S., and to avail ourselves of the unique talents and capabilities of foreign scientists

working in the rehabilitation field. They also directly benefit the countries involved and contribute to the strengthening of U.S. relationships with them as well as furthering our foreign policy aims.

Sponsoring Agencies. Any governmental or other nonprofit agency or institution in a cooperating foreign country that is capable of, or has the potential for conducting research on rehabilitation problems, may submit a research or demonstration proposal to the Vocational Rehabilitation Administration. The Vocational Rehabilitation Administration does not specify the nature of the organization nor the kind of research it would like to see undertaken in any country. Rather, the agencies in the cooperating countries are asked to identify what they consider to be their major rehabilitation problems and the areas in which they feel they are most competent to conduct research. If their proposals are directed toward development of new knowledge and techniques for meeting problems of disability which are found in the United States as well as in the participating countries, the projects are approved. Invariably, the foreign agencies assign their outstanding experts to the projects. Whenever possible, the research projects are designed to include collaborative research between American organizations and universities, and organizations and universities in the cooperating countries.

Nature and Results of Research Projects. The following examples reflect the scope and depth of the international research and demonstration program as well as the far-reaching effects of the individual projects:

In Poland, the Department of Rehabilitation, Medical Academy in Warsaw, is making great strides in the immediate post-surgical fitting of prostheses to amputees. The surgical techniques developed in this research project enable amputees to walk on artificial limbs soon after surgery — most patients take their first step the day following. In addition to the physical and psychological benefits to the patient, there can be great savings in hospital and other costs. Currently, post-surgical practices in orthopedic surgery require extended periods of time before an artificial limb is fitted and patients become ambulatory. American specialists at the Veterans Administration Hospital, Seattle; the Naval Hospital, Oakland, California; Duke University, the Institute of Rehabilitation Medicine of the New York University Medical Center, and other centers in the United States are developing similar techniques under VRA domestic research grants.

Dr. Marian Weiss, the director of the project in Poland, made a movie of his project. The movie won first prize at the 1966 International Rehabilitation Conference in Weisbaden, Germany.

In India, Pakistan and Israel, there are projects relating to the rehabilitation of persons with heart disease. In Bombay, research is directed toward the medical, psychological, social and vocational needs of heart patients from the time of their admission to the King Edward Memorial Hospital until their return to active life. In Karachi, a comprehensive rehabilitation program for persons with heart disease is underway including investigations on ethnic, occupational, nutritional and cultural influences on the incidence and prevalence of heart disease. In Israel, intensive studies are being made on the influence of body activity on the vocational rehabilitation of coronary patients. The Institute of Physiological Hygiene, Government Hospital, Donolo, Tel Aviv, is producing worthwhile information on the significant progress made in the

rehabilitation of patients when they are given graduated physical activity. The rehabilitation methods and techniques developed in this project are described in a film "Active Rehabilitation of Cardiac Patients" that was shown at the 1966 International Congress of Cardiology in New Delhi and at the 1967 Scientific Meeting of the American College of Cardiology in Washington, D. C.

Heart projects in India, Pakistan, Yugoslavia and Israel are tied in with a VRA-supported domestic research project at the Institute of Rehabilitation Medicine, New York University Medical Center. The domestic project is using cross-cultural data obtained from the overseas projects — including blood samples and family and national backgrounds — in studies designed to identify individuals who are prone to coronary heart disease and stroke and to determine the effects of planned preventive therapy with respect to such people.

The J. J. Group of Hospitals in Bombay has in operation a very promising project dealing with the global rehabilitation problems of burns and burn accidents. This research is attracting the interest of researchers in major burn centers in the United States. For example, collaborative work is now underway between Indian experts associated with the project and researchers at the University of Texas Medical Branch, Galveston, Texas.

Another example of international cooperation is found in the Indian and Israeli projects on the rehabilitation of persons with leprosy. Although there is not a high incidence of leprosy in the United States, the problem of anesthetized extremities is widespread. The work abroad in tendon transfers, in grafts and electro-diagnostic study of Hansen's Disease and in restorative surgery ties in closely with the VRA-supported domestic research projects on Hansen's Disease that are being conducted by Louisiana State University in Baton Rouge in cooperation with the United States Leprosorium at Carville. Furthermore, these studies closely relate to experimentation being done elsewhere on persons disabled by arthritis.

In Israel, the Ministry of Social Welfare in conjunction with the Industrial Department of the Institute of Productivity is conducting highly successful studies in methods of training the blind for employment in the textile industry. The training materials and a training film developed under this project will be used in a similar project that the VRA is helping to develop in cotton mills in the United States. This project in the United States will open up an entirely new avenue of employment for blind people.

The Ministry of Social Welfare is conducting a second project relating to the employment of blind people as data processing machine operators. The results of this research program are being compiled in a special guide for use in the United States and other countries that are faced with mechanization and automation that would affect employment opportunities for handicapped persons.

The Department of Orthopedic Surgery and Physical Medicine and Rehabilitation, Hadassah University Hospital, Jerusalem, is keeping pace with current developments through its experiments with plastic materials in the fabrication of lightweight, low-cost prosthetic and orthotic devices. Much of this experimentation is being done in collaboration with the Biomechanical Laboratory, Walter Reed Hospital, Washington, D. C.

One of the earliest projects submitted to Vocational Rehabilitation Administration came from the TATA Agricultural and Rural Training Center for the Blind in Phansa, India. This project which provides for the training of blind people as farmers is truly international in terms of its support and the application of its results. The American Foundation for Overseas Blind, the Vocational Rehabilitation Administration, the Royal National Institute for the Blind (England), the state and national governments in India and various individuals and foundations in and outside India contributed to the support of the project. Rehabilitation experts from the United Arab Republic, Syria and other countries have visited the project to observe the techniques developed and have established similar projects in their own countries. Experts from the Phansa project serve as consultants to the newly-established projects.

The far reaching economic effect of these projects is perhaps best illustrated by a project developed in Sao Paulo, Brazil, soon after the international research program was put into operation in 1961. With the assistance of the World Rehabilitation Fund, The Associcao de Assistencia a Crianca Defeituosa, the local association for the aid of crippled children, developed a research project to explore the feasibility of concentrated, short-term methods for training orthopedic brace makers. The course is compressed into four months of intensive work-training which formerly required two years of orthotist apprenticeship. Volkswagen of Brazil agreed to mass produce the basic brace parts, making use of the latest developments in design and materials. Less than one year after the project was put into operation, 15 disabled people received the first braces ever to be produced in Brazil by modern mass production methods. Today, Brazil has a new industrial activity and disabled people have the benefit of braces of superior construction, turned out quickly and inexpensively, and of more well-trained orthotists.

Dr. Bonafim, the director of the project, and the Association have donated braces to South Viet Nam for use by the World Rehabilitation Fund in fitting the war victims and handicapped in that country with modern appliances.

Enumeration of Projects. The following is a listing of rehabilitation research and demonstration projects by country:¹

- | | |
|---------------|--|
| <u>Brazil</u> | - Experimentation with the cerebral palsied; research in short-term training of orthotists; rehabilitation of the severely disabled. |
| <u>Burma</u> | - Establishment of a rehabilitation center in an economically developing country; research in low cost production of prostheses using local materials; study of hearing aids under humid conditions. |
| <u>India</u> | - Rehabilitation of the blind into competitive employment; rehabilitation of cardiac patients; development of prostheses for persons with facial defects; rehabilitation of persons disabled by convulsive disorders; early detection of visual defects; operation of a mobile ophthalmological unit; establishment of a prosthetic and orthotic research workshop; research in audiology and speech pathology; rehabilitating deaf persons; research in rehabilitation of leprosy patients; rehabilitation of the tuberculous; rehabilitation of the mentally retarded, and rehabilitation of the mentally ill. |

¹See Appendix for a more detailed description of these projects.

- Israel - Study of use of plastic and development of improved techniques in making orthopedic braces; rehabilitation of blind persons for work in cotton mills and as Data Processing Machine Operators; evaluation of the importance of orientation and mobility in rehabilitation of the blind; investigation of medical, social, economic and vocational problems of individuals with low-back pain syndrome; influence of sports on rehabilitation of paralytics; investigation of ways to rehabilitate mentally handicapped adolescents; rehabilitation of the deaf, and the influence of group psychotherapy on work adjustment of delinquent adolescents.

- Pakistan - Investigation of the medical, psychological, social and cultural aspects of mental retardation; rehabilitation of persons with orthopedic disabilities resulting from neurological, muscular, bone and joint conditions; establishment of a center for research in the fabrication and fitting of artificial limbs and braces, and rehabilitation of persons with Parkinson's disease.

- Poland - Rehabilitation of young people severely disabled by arthritis; application of new rehabilitation methods, including development and application of new techniques in the field of prosthetics and orthotics; analysis of neuro-muscular coordination in individuals with motor organ injuries; investigation of the work capacity of stabilized tuberculosis patients, and influence of rehabilitation upon chronic schizophrenics.

- UAR
Egypt - Rehabilitation of the blind in their villages and rural areas; establishment of a prosthetic and orthotic research center; establishment of an optical aid clinic, and preparation of the mentally retarded for employment.

- Syria - Establishment of an experimental agricultural-vocational center for the rehabilitation of blind persons from rural areas.

- Yugoslavia - Research into rehabilitation of patients suffering from mental disorders; experimentation in the development of new prosthetic and orthotic devices; study of hearing tests and auditory training techniques employed in the rehabilitation of the deaf and hard of hearing and research in the rehabilitation of people disabled by coronary artery disease.

Rehabilitation excellence is not an exclusive U. S. possession. The talents and capabilities of rehabilitation workers and institutions in other lands are a valuable resource. Therefore, the Vocational Rehabilitation Administration looks to expansion of its overseas research program in the years to come, for it feels that through these collaborative projects the products of foreign research will add to the quality and productivity of our domestic programs. Similarly, the results of U. S. research will enrich their programs.

Interchange of Rehabilitation Experts

A vital adjunct to research and demonstration programs is the Vocational Rehabilitation Administration's interchange of experts program.

Number of Interchange Experts. Under Section 4 of Public Law 86-610, the International Health Research Act, the Vocational Rehabilitation Administration is authorized to arrange for the interchange of scientists and experts engaged in rehabilitation research between the United States and participating foreign countries. Since the interchange program was initiated in September, 1961, the Vocational Rehabilitation Administration has brought to the United States 106 foreign experts and has arranged research activities abroad for 100 American experts.

Conditions. In carrying out this interchange program, the Vocational Rehabilitation Administration purchases round-trip transportation for the experts, using the counterpart funds available for this purpose. American experts are provided a per diem in local currency to cover their living expenses while in the foreign country. Assignments are generally of a two to three months' duration. No salary payments are made — the experts or their employing organizations make their services available to the program without cost to the Vocational Rehabilitation Administration or the research project or projects in the foreign country with which the expert is associated.

Assignments. Foreign experts coming to the United States are given an opportunity to work with American experts on research projects or activities that are related or similar to the research or demonstration they are conducting in their native land. Similarly, American experts are assigned to projects related to their research or activities in the United States.

Interchange Examples. The first U. S. experts to collaborate under the interchange program with foreign experts on rehabilitation research were plastic surgeons from various parts of the United States. The Vocational Rehabilitation Administration, in cooperation with the American Congress of Plastic Surgeons, arranged for 17 plastic surgeons affiliated with U. S. medical schools to work for periods of two months each on a rotation basis at the Christian Medical College and Hospital, Vellore, South India, to help build a comprehensive experimental program for the rehabilitation of leprosy patients. They were involved principally in the physical reconstruction of the leprosy patients and helped develop new techniques of tendon transfers, grafts to eyebrows, transfer of muscle for function of paralyzed eyelids, skin grafts to fingers and thumbs, shifting of tendons to the feet in order to change the weight-bearing potential, and many other procedures designed to correct conditions resulting from leprosy. Even though there is little leprosy in the United States, many of the techniques developed in India for the leprosy patient are being used in the United States and elsewhere to correct similar deformities caused by other diseases.

The American Congress of Neurological Surgeons and the Vocational Rehabilitation Administration are currently cooperating in sending American neurosurgeons to India, Pakistan and the United Arab Republic on a rotation basis to participate in research and demonstration activities involving the rehabilitation of patients requiring neurosurgery.

In connection with a project on the development of improved techniques in fabricating orthopedic braces being conducted in Israel, a prosthetist and two orthopedic surgeons were brought to the United States, and experts from the Biomechanical Research Laboratory of Walter Reed Army Medical Center were sent to Israel. These experts have reported that the new uses for plastic in

braces developed under this project will result in revision of methods for production of braces which will be lighter and more effective, permitting greater mobility for the disabled. Recently, an expert in prosthetics and orthotics from the World Rehabilitation Fund was sent to VRA-supported research projects in India, Pakistan and the UAR to help in the establishment of workshops and to assist in the fabrication of inexpensive durable devices using locally available materials.

Cardiologists, who are participating in VRA-supported projects related to rehabilitation of people with heart disease in India, Pakistan and Israel, have been brought to the United States to observe and participate in research activities at the Institute of Rehabilitation Medicine in New York. The American experts from the Institute have worked on the foreign projects. Since the foreign research projects are directly tied in with the research at the Institute which is using cross-cultural data, blood types, and family and national backgrounds in studies designed to identify individuals prone to coronary disease and stroke, this interchange is vital to the conduct of the U. S. and the foreign studies.

Dr. N. H. Antia and his associates at the J. J. Group of Hospitals who have been conducting studies on burns and burn accidents have also been brought to the States to work at U. S. burn centers. Specialists from several U. S. burn centers have gone to India to work with Dr. Antia and his associates.

Dr. Marian Weiss, the Director of the research project on the immediate post-surgical fitting of prostheses in Poland, conducted panel discussions on his project at last year's meeting of the American Academy of Orthopedic Surgeons in Chicago and visited a number of hospitals and prosthetics centers in the United States. Arrangements were also made for staff in such U. S. centers to visit the center in Poland. This interchange has resulted in development of similar projects at seven centers in the United States through which U. S. amputees have been helped to walk at a much earlier time than was possible before, and many are able to return to work within weeks after amputation.

Further cross-fertilization of research results is provided by an interchange of experts among the participating countries in the VRA foreign research program. For instance, an expert from the project on training the blind as farmers in India was sent to give assistance on a similar project in Syria, and an expert from Egypt was sent to India. Israeli surgeons working on the project for the rehabilitation of those afflicted with leprosy in Israel were sent to Vellore and Bombay, India, to exchange views and techniques with the directors of the Indian projects. Later the Indian specialist visited Israel.

Last year the Vocational Rehabilitation Administration brought to the U. S. from Yugoslavia, Professor Petar Guberina, Director, Institute of Phonetics, University of Zagreb, who is conducting a unique research project which the VRA is supporting involving new techniques for training the deaf and hard of hearing to communicate. Dr. Guberina's techniques are now being employed on an experimental basis in the Columbus, Ohio, public schools.

Dr. Berthold Lowenfeld, Research Professor, San Francisco State College, visited Israel in 1965 under the interchange program. He describes his work and his observations in an excellent article "Vocational Rehabilitation Administration Grant Projects in Israel" that appeared in Blindness 1966.

One of the latest American interchange experts is an optical aids specialist, made available by the Industrial Home for the Blind, Brooklyn, N.Y., who set up a low vision aid clinic at the Madurai Medical College, Madurai, South India. This is the first such clinic in India. Not only is the Madurai Medical College now in a position to provide services to people with low vision, but it is also in a position to conduct research for the improvement of visual aids and the development of new ones.

The interchange program has stimulated universities throughout the U. S. to provide fellowships to staff participating in VRA-supported research projects. The University of Washington has offered fellowships to two staff members from the prosthetics project in Poland and a neurological surgeon from India has a residency in his field at the Medical School of Dartmouth University. New York University Institute of Rehabilitation Medicine has provided a number of residencies and fellowships through the World Rehabilitation Fund to medical staff associated with the VRA-supported research projects who were brought to the U. S. under the interchange program.

As indicated there have been over 200 participants in the interchange program since its inception in 1961. These participants represent all disciplines involved in rehabilitation and rehabilitation research — plastic surgery, neurosurgery, otolaryngology, orthopedics, physical therapy, speech pathology, audiology, counseling, vocational training, psychology, social work, prosthetics and orthotics, services for the blind and other disability specialties, cardiology, workshop and rehabilitation center management, and physical medicine and rehabilitation.

The interchange program offers American specialists opportunities to conduct research under conditions never found in the United States. Foreign experts are given the opportunity to observe American methods and protocol and to work with materials and equipment not available to them in their countries. In addition, the opportunities for personal contact, firsthand observation, and the direct exchange of ideas and practice add immeasurably to the value of the research being done here and abroad. Not to be overlooked is the fact that the interchange program also provides the opportunity for foreign citizens to get to know America, and for Americans to get to know foreign nationals and their countries.

Research Fellowships

The Vocational Rehabilitation Administration has granted 15 special research fellowship awards to qualified researchers whose research has involved study in Canada, England, France, Sweden, Switzerland, Germany and other European countries. Research under this program has had as its primary purpose the advancing of knowledge and understanding of the vocational rehabilitation of disabled people.

The research fellows under this program have carried out their research with some of the world's outstanding authorities, such as Dr. Piaget of the University of Geneva and Professor Eysenck, Institute of Psychiatry, University of London. The research with Dr. Piaget encompassed the measurement of reasoning and character development in the educable mentally retarded. The studies under Professor Eysenck involved the behavior therapies. Other

studies under the research fellowship program have been: disability of peripheral nerves, rehabilitation and care of epileptic patients, sociological and behavioral aspects of chronic illness and disability, speech transmission, effects of flat feet on body posture, halfway houses in the rehabilitation of the mentally ill, cross cultural studies of the cerebral palsied and of attitudes toward the disabled, and a survey and evaluation of rehabilitation facilities in Western Europe.

Training of Foreign Nationals

One of the most far-reaching aspects of the Vocational Rehabilitation Administration's international activities is visitations of people to the United States from other countries, in search of rehabilitation training or to observe United States methods.

Since 1947, more than 2,000 of them have come to the United States from 91 countries. They have come to the United States from practically every portion of the globe — many from the newly-established independent nations, some from countries behind the Iron Curtain such as Russia and Poland — from Burma, India, Thailand and elsewhere in Southeast Asia, the Latin American countries and from practically every country in Europe. They are specialists having fellowships from such public or voluntary agencies as the United Nations, the World Health Organization, the U. S. Agency for International Development, U. S. Department of State, the International Labour Organization, or the World Rehabilitation Fund; or trainees under sponsorship of their own governments; or are sent through professional relationships with the International Society for Rehabilitation of the Disabled, the American Foundation for Overseas Blind, or other voluntary agencies.

Upon request of these agencies or groups, the Vocational Rehabilitation Administration plans individual programs with these persons to meet their specific needs. Many of them participate in the training courses supported by the VRA in the various disciplines allied with rehabilitation practices. Others study United States rehabilitation facilities and their administration. Teams of experts in various disciplines from several countries also have been United States visitors.

These individuals come for training in all fields and disciplines involved in rehabilitation — physical medicine, social work, physical and occupational therapy, speech and hearing, prosthetics and orthotics, rehabilitation center and workshop operation, rehabilitation counseling, psychology, rehabilitation nursing, services for the deaf, the blind, the mentally ill, the mentally retarded, and rehabilitation program administration.

All are given the opportunity to spend extensive periods in a wide variety of public and voluntary rehabilitation agencies throughout the United States. The cooperation of the public and voluntary agencies has been most generous — without their cooperation such an extensive international training program could not be conducted. This assistance and inspiration has imbued the many who have come to the United States with the determination to improve services for the disabled of their countries. Their accomplishments have been significant.

One of the United Nations Fellows who came to the United States to study services for the blind returned to the Philippines to work effectively first for legislation establishing a rehabilitation agency and, that accomplished, served as the director of the program for 12 years. At the present time, he is acting as a technical assistance rehabilitation consultant in Thailand for the United Nations.

In 1954, the Director of a school for the mentally retarded, Mrs. Eloisa de Lorengo of Uruguay, came to the United States on a scholarship from the Foreign Operations Administration, one of the predecessors to the Agency for International Development, to study vocational rehabilitation and employment of the mentally retarded. Upon return to her country she immediately began to apply the information and ideas she gained by improving the school curriculum, instituting an agricultural project in connection with the school, establishing several workshops, developing placements in industry, and planning and promoting a national rehabilitation program for all the disabled of Uruguay. In May, 1965, she served as a Consultant for the planning of an Inter-American Workshop on Mental Retardation held in Puerto Rico in October, 1965. She was also a member of one of the teams that visited a number of Latin American countries to coordinate planning for the aforementioned workshop. Her participation in the actual conference was outstanding, and her leadership qualities were recognized by her selection as one of the two recipients of the Kennedy Foundation Leadership Award.

Other former trainees are also directing special rehabilitation centers or programs in their countries or otherwise serving the disabled. Still others are directing research or training projects.

The Vocational Rehabilitation Administration gives every training experience to those persons who will be in a training capacity on their return to their home countries, recognizing that from the viewpoint of national self-respect, continued dependence on foreign training is undesirable. Each nation hopes that it may provide its own training so that it may participate on an equal contributing basis in world programs for the welfare of man.

Technical Assistance

For some years the VRA has recruited American experts in vocational rehabilitation for temporary assignment by the Agency for International Development and the United Nations to countries which request this kind of help. Rehabilitation programs in Brazil, El Salvador, Peru, The Dominican Republic, Formosa and Mexico have benefited greatly through the services of such outside experts.

Preparation of Position Papers

Another continuing responsibility of the Vocational Rehabilitation Administration is the preparation of position papers on rehabilitation for use by the State Department and official U. S. delegations to United Nations' conferences. The positions taken by the U. S. delegations are largely responsible for the inclusion of rehabilitation programs in the activities of the United Nations, the International Labour Organization and the World Health

Organization. Along this same line, VRA assisted the Senate Sub-Committee on Reorganization and International Organization in its study of rehabilitation abroad. A publication "Rehabilitation of the Disabled in Fifty-One Countries" has resulted from this study. This publication, prepared by VRA, is the only one of its kind that describes the rehabilitation programs and resources in the major countries of the world.²

Participation in International Meetings and Conferences

The Vocational Rehabilitation Administration participates in international meetings and technical seminars in rehabilitation which do so much to promote the cause of rehabilitation over the world. The most recent of these were the 1964 World Assembly of the World Council for the Welfare of the Blind and the 1966 Congress of the International Society for Rehabilitation of the Disabled.

International Exchange of Information

Rehabilitation's continuing growth has the aid and support of many organizations that participate in international affairs. As indicated, the Vocational Rehabilitation Administration takes part in international, regional and other meetings where the perspective is greatly on rehabilitation around the world. Information flowing from these conferences, from research in the United States and the countries coactive with it, and from other sources of rehabilitation knowledge, is disseminated widely by the Vocational Rehabilitation Administration, helping to bind all nations into a world community responsive to the needs of all disabled people.

In addition, the Vocational Rehabilitation Administration has made project grants to a variety of organizations whose primary purpose is the international exchange of information. This includes grants: to abstract worldwide publications and reports in the field of medical rehabilitation and to publish the information periodically; to establish a World Commission on Vocational Rehabilitation to collect and disseminate information on employment of the handicapped throughout the world; to demonstrate the value of international cooperation in the exchange of vocational information through the "sister city" program; to establish an International Commission on Research in Rehabilitation to study the current status of research in all countries and to serve as a world clearinghouse for rehabilitation research information; to collect and disseminate literature in research and its practical application to prosthetics, orthotics and technical aids to provide a basis for coordination among researchers over the world looking to the standardization of devices and techniques on an international basis; and to establish an International Commission on Vocational Rehabilitation of the Mentally Retarded to collect and disseminate information on the techniques and programs developed through the world for opening full employment opportunities for the mentally retarded.

A key to the advancement and improvement of rehabilitation in the United States and in all other countries is that rehabilitation researchers and rehabilitation practitioners in all countries be currently aware of significant

²May be purchased from Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402 — Price 70 cents.

progress and developments over the world. It is the objective of the Vocational Rehabilitation Administration's international exchange of information program to see that the researchers and practitioners are, in fact, "currently aware" of such developments.

Rehabilitation and World Peace

We are aware of the hope and the promise that rehabilitation brings to the disabled person for a better life. That rehabilitation can also be a potent force in achieving world peace was eloquently said by Mary E. Switzer in the following statement to the Senate Committee on Labor and Public Welfare when the Committee was holding hearings on the Health for Peace Bill:

"There are vast areas of misunderstanding and mistrust among nations today, born primarily of differences in social, economic and health standards, national mores, and the problems of education and communication. But in this sea of differences, there are islands of quick understanding, honest affection and mutual trust. One of these is the internationally-shared dream of all peoples that the spectre of disease and the humiliation of the dependent cripple shall not forever be an inescapable part of their lives. It is my firm belief that a well-planned and well-defined international program in health and rehabilitation would offer an unparalleled opportunity to advance understanding and peace among mankind."

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES

Listed by Country and Grant Number, Sponsoring Organization and Project Director,
and Purpose

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
Brazil VRA-BRA-1	Associacao de Assistencia a' Crianca Defeituosa Sao Paulo, Brazil Dr. Renato da Costa Bomfim	Experimentation with the cerebral palsied in evaluating and classifying them in re- gard to vocational potential.
Brazil VRA-BRA-2	Associacao de Assistencia a' Crianca Defeituosa Sao Paulo, Brazil Dr. Renato da Costa Bomfim	Research in development of short-term training methods for orthotists. To test the hypothesis that orthotists can be trained to fabricate, modi- fy, adjust, and fit prefabri- cated orthoses within a period of four months. To discover means of stimulating com- mercial production of orthe- ses for domestic use and export to nearby countries.
Brazil VRA-BRA-3	Instituto de Reabilitacao Sao Paulo, Brazil Dr. F. E. Godoy Moreira	Research into practical meth- ods of evaluating the work capacity of the disabled pa- tient.
Burma VRA-BUR-1	Ministry of Social Wel- fare Board for Rehabilitation and Employment of Disabled Persons and The Thamaing Reha- bilitation Center Rangoon, Burma Dr. Hla Pe	To develop and evaluate methods for establishing a comprehensive rehabilitation service under government auspices in an economically developing country. Among other things to examine ways of combining the resources of voluntary organizations and public services for the re- habilitation of the disabled.
India VRA-IND-1	Ramakrishna Mission Ashrama West Bengal, India Swami Lokeswarananda	Investigation of rehabilitation training and placement tech- niques in rehabilitating blind persons into competitive em- ployment.
India VRA-IND-2	The Cardiology Unit, King Edward VII Memorial Hospital Bombay, India Dr. K. K. Datey	Investigation of methods for rehabilitating cardiac patients including studies of their medical, psychological, social and vocational needs from the

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	Dr. K. K. Datey (Continued)	time of admission to the King Edward VII Memorial Hospital to their return to former activity or employment. Among other things, to investigate the effects of Yoga and music in the rehabilitation of cardiac patients.
India VRA-IND-3	The Tata Department of Plastic Surgery J. J. Group of Hospitals Bombay, India Dr. N. H. Antia	To study the use and acceptability of facial and facio-maxillary prostheses for the rehabilitation of persons with facial defects caused by congenital lesions, trauma, cancer, burns, and other causes. To develop new fabricating and fitting methods and to study the psychological reactions of patients to facial prosthetic restorations.
India VRA-IND-4	Christian Medical College and Hospital Vellore, South India Dr. Jacob Chandy	Investigation of methods for the rehabilitation of persons disabled by convulsive disorders. To determine incidence, prevalence, etiological factors, types of convulsive disorders and occurrence in surgically treatable conditions and the long-term management of cases.
India VRA-IND-5	The National Society for the Prevention of Blindness New Delhi, India Dr. L. P. Agarwal	To develop techniques for a community coordinated program for early detection of visual defects, including patterns and procedures for early detection in the populations of schools and other institutions, and to develop training techniques for non-technical personnel engaged in prophylactic work and in other aspects of detection programs.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
India VRA-IND-6	The National Association for the Blind Bombay, India Lt. G. L. Nardekar, Honorary Secretary	Investigation of rehabilitation workshop methods which will best foster the absorption of blind workers into open com- petitive employment.
India VRA-IND-7	Christian Medical College and Brown Memorial Hospital Ludhiana, India Dr. Ronald J. Garst	To experiment with and to de- termine the most practical indigenous handicrafts of India to teach the severely handi- capped patients (particularly paraplegics) while they are under hospital care, with a view to fitting them to earn a livelihood after they leave the hospital.
India VRA-IND-8	The Tata Agricultural Rural Training Centre for the Blind Phansa, India Mr. Feroze Moos, Honorary Secretary	To experiment with ways of rehabilitating blind people as farmers and handicraft work- ers and resettling them in the villages in India; and to in- vestigate the methods of crop production and crafts region- ally and to ascertain which of these will be best suited in each particular case.
India VRA-IND-9	Children's Orthopedic Hospital Bombay, India Dr. Perin K. Mullaferoze	To experiment with methods for the rehabilitation of se- verely disabled cerebral pal- sied children including work evaluation and work prepara- tion in a workshop setting of those children of working age.
India VRA-IND-10	Christian Medical Col- lege and Hospital Vellore, South India Dr. Ambrose J. Selvapandian	To investigate methods for the rehabilitation of persons disabled by leprosy including (a) the study of surgical re- construction of deformed and paralyzed patients; (b) ex- perimentation in the care and treatment of anesthetic limbs and the development of special appliances to replace ordinary prosthetics that are frequent- ly unsuitable for such limbs;

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER		SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)		Dr. Ambrose J. Selvapandian (Continued)	(c) experimentation in low cost modifications of treat- ment methods applicable in rural surroundings; and (d) in- vestigation of vocational train- ing methods and job placement of such patients.
India	VRA-IND-11	Christian Medical Col- lege and Brown Memorial Hospital Ludhiana, Punjab, India Dr. Victor C. Rambo	Research and demonstration project for the operation of a mobile ophthalmological unit to provide intensive ophthal- mological and other rehabili- tation services to disabled people with serious sight im- pairments living in remote rural areas looking to their return to useful productive work and living.
India	VRA-IND-12	All-India Institute of Medical Sciences New Delhi, India Col. T. D. Chablani	Establishment of a prosthetic and orthotic research work- shop to develop techniques and to improve rehabilitation of orthopaedically and other handicapped persons. Re- search into the development of new materials utilizing indigenous raw material in the country to reduce the cost of manufacture.
India	VRA-IND-13	All-India Institute of Medical Sciences New Delhi, India Dr. A. Sinha	Establishment of a pilot re- habilitation unit in audiology and speech pathology in the Department of Otolaryngology in collaboration with the Physical Medicine and Re- habilitation Centre to ex- periment with methods of pro- viding multi-lingual speech therapy and other audiological services in India.
India	VRA-IND-14	U. P. Deaf & Dumb Institute Allahabad, U. P., India Mr. S. D. Misra	Investigation of techniques for rehabilitating deaf persons by means of vocational guidance, training in indigenous crafts

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	Mr. S. D. Misra (Continued)	and other trades, and selective placement.
India VRA-IND-15	Department of Ophthalmology Madurai Medical College Madurai, South India Professor G. Venkataswamy	The establishment of a pilot demonstration rehabilitation centre for the blind, including an optical aids evaluation unit. To assist blind people to develop personal and social skills necessary to overcome problems brought about by blindness. To improve the residual visual acuity of vis- ually handicapped persons through the use of low vision aid devices.
India VRA-IND-16	The Lions Centre for the Physically Handicapped Mangalore, South India Dr. George P. Modayil	An investigation of ways to develop and improve rehabili- tation methods for persons with orthopaedic disabilities, including persons with lep- rosy. To determine and cor- rect or alleviate mechanical and other problems associated with the use of prosthetic and orthotic devices, especially in connection with footwear suit- able to anaesthetic feet.
India VRA-IND-17	Clara Swain Hospital Bareilly, U. P. India Dr. J. S. Makhani	A study of the vocational rehabilitation potential of patients considered unem- ployable due to tuberculosis, especially those with spine and bone involvements.
India VRA-IND-18	"Nandanvan" Day School for Mentally Retarded Persons The Matru Sewa Sangh Nagpur, India Dr. Kusum Wankar	To explore how effective vo- cational rehabilitation serv- ices may be provided in an educational and occupational training center for mentally retarded persons. To explore the techniques and methodo- logy in the city of Nagpur for deriving estimates of inci- dence and prevalence of men- tal retardation in the non-

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	Dr. Kusum Wankar (Continued)	adult population, i.e., adoles- cents and youths at or near working age.
India VRA-IND-19	The Wanless Hospital Maharashtra, India Dr. James B. Donaldson	To devise prosthetic devices suitable for persons in rural occupations and to investigate the availability and use of in- digenous materials for fabri- cating inexpensive but durable prostheses; to study and adapt new surgical techniques and procedures to reduce the length of time required for hospitalization and rehabili- tation of disabled persons; to develop and include instruc- tion on rehabilitation as an integral part of the hospital training program for physi- cians and ancillary personnel.
India VRA-IND-20	The Department of Education Government of Madras Madras, India Mr. B. A. Nandago Paul	An investigation of methods of rehabilitating blind people from Madras and its environs for employment within the newly developing "Industrial Estates" in South India, and determination of the feasibil- ity of setting up a placement and follow-up service for blind trainees in order to fully integrate them into the eco- nomic and social life of the "Industrial Estates."
India VRA-IND-21	Madras Medical College and Government General Hospital Madras, India Dr. M. Natarajan	Experimentation with design of prostheses and assistive devices especially suited to local climate and working conditions, and manufactured from indigenous materials.
India VRA-IND-22	J. J. Group of Hospitals in cooperation with Acworth & Chembur Leprosy Homes (Continued)	An investigation of nerve trunks in the limbs which are frequently the site of maximal (though not initial) damage and are responsible for both the

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	(Continued) The Indian Cancer Re- search Center and the Indian Council on Medical Research Neuropathology Unit Bombay, India Dr. Darab K. Dastur	sensory and motor deficits in leprosy; and exploration of the possibility of developing sur- gical therapeutic techniques for the prevention of nerve trunk damage.
India VRA-IND-23	J. J. Group of Hospitals (Plastic Surgery Unit) in cooperation with Acworth Leprosy Home Bombay, India Dr. N. H. Antia	Establishment of a fully or- ganized pilot centre for the treatment and rehabilitation of patients who have been burned and compilation of sta- tistics and study of the causes of burns. Investigation to determine the relative reha- bilitation potentials of leprosy patients with different types of deformities, e.g., facial de- formities, deformities of the hands and feet, and assess- ment and evaluation of the ef- fects of surgery on the reha- bilitation of such disabled patients.
India VRA-IND-24	Nagpur Association for the Rehabilitation of Children with Ortho- pedic Disabilities (NARCOD) Nagpur, India Mr. N. M. Patil	Coordination of rehabilitation services to make available, through correct information and guidance, all possible fa- cilities in the city of Nagpur, to the handicapped of all cate- gories.
India VRA-IND-25	All-India Institute of Medical Sciences New Delhi, India Dr. K. L. Wig	Investigations of the factors in the teaching of medical sciences affecting the use of the team approach for reha- bilitating the sick.
India VRA-IND-26	Christian Medical College and Hospital Vellore, South India Dr. Y. P. Kapur	An investigation of the audio- logical and rehabilitation needs of persons with speech and hearing disorders, de- signed to develop the follow- ing: hearing and speech pro- cedures based on Indian lan-

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	Dr. Y. P. Kapur (Continued)	guages; comprehensive medi- cal, audiological, and counsel- ing services; a program for community education and guidance on speech and hear- ing problems; and methods of expanding employment oppor- tunities for persons with hearing and speech disorders.
India VRA-IND-27	Christian Medical Col- lege and Brown Memorial Hospital Ludhiana, Punjab, India Dr. Ronald J. Garst	To develop rehabilitation methods for the severely dis- abled that will enable them to secure employment in the open market or in sheltered employment. To investigate ways and means for the fabri- cation of braces and artificial limbs using entirely Indian produced materials, and sim- plifying them so they can be produced at minimum cost.
India VRA-IND-28	Medical College Trivandrum, India Dr. M. Thangavelu	Development and application of a comprehensive rehabili- tation research and training program within a medical college, including the devel- opment of teaching and train- ing materials and techniques in the various rehabilitation disciplines for training medi- cal students, resident physi- cians, nurses and technicians and to seek ways of introduc- ing most effectively the reha- bilitation concepts into the medical curriculum.
India VRA-IND-29	Christian Medical Col- lege and Hospital Vellore, South India Dr. Jacob Chandy Dr. George Cherian	To conduct a comprehensive study of cerebrovascular dis- eases as seen in C.M.C.H., Vellore to: assess cardiovas- cular dysfunction associated with cerebrovascular disease; delineate the clinico-angio- graphic parameters modifying prognosis in cerebrovascular

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	Dr. Jacob Chandy Dr. George Cherian (Continued)	disease and their relation to the degree of rehabilitation achieved; evaluate by follow-up studies of the difference, if any, in the final rehabilitation of the patient, between a short-term inpatient program, a long-term hospitalization and an out-patient rehabilitation program, with estimates of cost per patient for each type of management: and experiment in low cost modifications of treatment methods applicable in rural surroundings.
India VRA-IND-30	Christian Medical College and Hospital Vellore, South India Dr. Mary Verghese	Investigation of methods suitable to village conditions for the rehabilitation of paraplegics and quadriplegics, including: investigation of the usefulness of simple adaptive equipment in helping patients be self sufficient in their village homes which have limited facilities; study of the problem of decubitus ulcer in its prevention and treatment by adaptations in the bed, to modify surgical procedures to treat such ulcers, and to study the relationship of malnutrition and other factors in the healing of such ulcers, study of the suitable adaptations in the management of urinary problems; and investigation of the usefulness of physical agents, drugs and anesthetic procedures in the control and relief of spasticity, using electronic equipment to determine the value of the above procedures.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
India VRA-IND-31	Christian Medical Col- lege and Hospital Vellore, South India Dr. A. J. Selvapandian	To elaborate and adapt the established techniques of sur- gical reconstruction to the specific types of occupational and environmental problems commonly encountered among leprosy patients. To explore the possibilities of preventive rehabilitation by studies on the early detection and treat- ment of nerve damage, muscle paralysis and tissue destruc- tion which lead to the develop- ment of incapacities and de- formities in this disease.
India VRA-IND-32	Schieffelin Leprosy Research Sanatorium Karigiri, South India Dr. C. K. Job	Rehabilitation of leprosy pa- tients in a comprehensive leprosy control program in- volving re-education and re- settlement concurrently with medical and surgical care.
India VRA-IND-33	Kasturba Medical College Manipal, South India Dr. M. P. Pai	Establishment of a Center for Research on the Management and Rehabilitation of Persons Disabled from Burns.
India VRA-IND-34	Fellowship of the Physi- cally Handicapped Bombay, India Mrs. Fathema Ismail	Development of a Pilot Pro- gram for the Preparation of the Disabled for Employment in Metal Trades: to develop methods and techniques for use in preparing the ortho- pedically disabled and the cerebral palsied for employ- ment in metal trades; to de- velop assistive devices to help the disabled to achieve maxi- mum work efficiency; to in- vestigate methods of market- ing products; to establish cooperative small scale in- dustries for the disabled.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
India VRA-IND-35	Directorate of Employ- ment Exchanges Ministry of Labour & Employment Government of India New Delhi, India Director General of Employment and Training	Establishment of two pilot re- habilitation centers for voca- tional evaluation, adjustment and other rehabilitation as- sistance to physically handi- capped persons.
India VRA-IND-36	The Blind Relief Asso- ciation New Delhi, India Dr. (Mrs.) Durgabai Deshmukh	Establishment of a Technical Training Center and Sub-con- tract Workshop for the Blind to: undertake a scientific as- sessment of the aptitudes and abilities of blind trainees; im- part to the blind such indus- trial training as is in conson- ance with their aptitudes and is considered useful in the light of employment oppor- tunities; set up an establish- ment which can function as a special workshop doing sub- contract work on behalf of local industries; assist blind trainees secure suitable placement in ordinary indus- tries.
India VRA-IND-37	Christian Medical Col- lege and Hospital Vellore, South India Dr. Rose Chacko	An investigation of the effec- tiveness of family participa- tion in the treatment and re- habilitation of the mentally ill which will: observe and study the families of the men- tally ill to determine their influence on the illness of the patient and to identify predic- tive criteria which will be useful in the rehabilitation process; develop methods of treatment and rehabilitation of mentally ill patients which involve family participation in the rehabilitation process; determine the extent to which the participation of the fam-

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	Dr. Rose Chacko (Continued)	ily in the total treatment pro- gram can influence the pa- tient's recovery, aid in improving his vocational situation and assist him to avoid rehospitalization; and study the effects of intensive follow-up services after pa- tients are discharged from the hospital.
Israel VRA-ISR-1	Malben-JDC (Institu- tions for the Care of Handicapped Immig- rants) Tel-Aviv, Israel Dr. Izchak Margules	Pilot project for the applica- tion of experimental techni- ques for the assessment of the vocational rehabilitation po- tential and requirements of adult cerebral palsied patients to provide a basis for planning community services and facil- ities directed toward their employment in suitable jobs.
Israel VRA-ISR-2	Ministry of Social Welfare and Israel Institute of Produc- tivity Tel-Aviv, Israel Mrs. H. Kahn	To experiment with methods of training the blind in cone winding, cotton spinning and weft winding cotton weaving. To experiment in a training center with the teaching of the complete range of operations necessary for handling of machinery in the textile in- dustry, adapted to the working ability of blind people, to provide for maximum utili- zation of the working capacity of blind persons and securing skilled manpower for the tex- tile industry.
Israel VRA-ISR-3	Hadassah Medical School in association with The National Insurance Institute and The Rehabilitation Division of the Ministry of Defense Jerusalem, Israel Dr. Kalman Jacob Mann	To isolate factors determining the adjustment of persons dis- abled as a result of their em- ployment or military service; to provide the foundation for action which will increase both the rate of adjustment and the number of persons adjusting to handicaps result-

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	Dr. Kalman Jacob Mann (Continued)	ing from such injuries; to use such findings to test the effectiveness of rehabilitation services in meeting needs indicated by the investigation; and to provide a basis for more effective planning in case management and national programs.
Israel VRA-ISR-4	Ministry of Health Jerusalem, Israel Dr. Josef Silberstein	An inquiry into causes and costs of the non-rehabilitation of patients hospitalized because of cerebrovascular accidents or valvular diseases of the heart. To inquire into the professional and administrative factors during hospitalization and after discharge which may be responsible for the non-rehabilitation of patients and to estimate the costs which their non-rehabilitation imposes on the economy.
Israel VRA-ISR-5	The Paul Baerwald School of Social Work The Hebrew University in cooperation with Rehabilitation Division Ministry of Defense Jerusalem, Israel Mrs. Charlotte Salzberger	To study two groups of disabled veterans, one of which has a 20% disability and is receiving monthly disability compensation and the other with a 19% disability granted no monthly compensation, to determine the effects of monthly compensation grants on the use made by the grant recipient of the job placement services of a rehabilitation agency.
Israel VRA-ISR-6	Department of Physical Medicine and Rehabilitation Hadassah University Hosp. Hebrew University, Hadassah Medical School Jerusalem, Israel Dr. A. Magora and Dr. F. Sagher	An electrodiagnostic study of the anaesthetic types of Hansen's disease to: (a) find electrodiagnostical pattern for the anaesthetic type of Hansen's disease; (b) compare the accuracy and reliability of the electrodiagnostic procedures between themselves

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	Dr. A. Magora and Dr. F. Sagher (Continued)	and as compared with the present bacteriological and immunological tests; (c) investigate the possibility of an earlier response to a certain medication by electrodiagnostic means (as compared with the clinical, bacteriological or immunological studies) and, if conclusive, an earlier evaluation of a certain drug in a certain patient; (d) evaluate the possibility of finding very early Hansen's disease in endemic areas, by electrodiagnostic means; (e) evaluate different drugs upon the neuro-muscular system; and (f) make early diagnosis of an eventual relapse.
Israel VRA-ISR-7	Malben-JDC Tel-Aviv, Israel Dr. Bernard E. Cohen	Demonstration project for the assessment of mentally retarded children, with applied research on genetic and metabolic etiology. To test the relationship between psychological tests and biochemical levels in the control of dietary therapy in metabolic diseases. To determine whether psychological test scores can be used to control therapy and to identify early signs of mental regression.
Israel VRA-ISR-8	SHATLEM (Israel Association for the Cerebral Palsied) Tel-Aviv, Israel Dr. George Mundel	To determine the cultural, social and educational factors relating to the ethnic backgrounds of parents in relation to their cerebral palsied children. Based on these findings, an attempt will be made to summarize what techniques and educational services are required to help these parents cope with and relate to the problem.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
Israel VRA-ISR-9	Ministry of Labour Jerusalem, Israel Mr. Israel Kaisar	Demonstration project on selective placement of persons classified as handicapped in labor exchanges. To demonstrate the key position of the placement function and its auxiliary vocational guidance function in the whole complex of dealing with the handicapped and their rehabilitation.
Israel VRA-ISR-10	Hadassah University Hospital Hebrew University Hadassah Medical School Jerusalem, Israel Dr. Gordon C. Robin	Study of new uses for plastics and the development of improved techniques in fabricating orthopaedic braces: to identify the plastics most suitable from the viewpoint of strength, lightness and cost; to find the best methods of working with these materials in the manufacture of orthotic appliances; to identify methods of altering or repairing such appliances after initial fitting; and to test and estimate the life expectancy of such orthotic appliances in normal use.
Israel VRA-ISR-11	National Insurance Institute and Hadassah University Medical School Jerusalem, Israel Dr. Y. Bernhard Neumann	A study of contact dermatitis in cement workers and their rehabilitation. To find ways to rehabilitate patients afflicted by chromodermatitis, since it is especially difficult to bring these patients back to their work or into another profession.
Israel VRA-ISR-12	The Israel Foundation for Infantile Paralysis (ILANSHIL-POLIO) Tel-Aviv, Israel Dr. E. Chigier	An assessment of the rehabilitation potential of post-polio children of school age in the central region of Israel to provide a basis for more effective planning for their rehabilitation.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
Israel VRA-ISR-13	Ministry of Social Welfare Office of Mechanization Centre of Ministry of Finance Educational Department of the IBM World Trade Corporation; and Jewish Institute for the Blind Jerusalem, Israel Mr. Yehuda Schiff	Research on rehabilitation of blind, partially sighted and otherwise handicapped per- sons as data processing ma- chine operators. The program aims at utilizing the abilities of educated blind persons to provide a vocation where use is made of their intellectual capacity combined with manu- al skill.
Israel VRA-ISR-14	Institute for Orientation and Mobility of the Blind Kirait Haim, Israel Dr. Rudolphina Menzel	To study and evaluate the im- portance of orientation and mobility in the rehabilitation of the blind with special ref- erence to the fundamental dif- ferences between the born blind and the newly blind.
Israel VRA-ISR-15	Department of Physical Medicine and Rehabilitation Hadassah University Hospital Jerusalem, Israel Professor E. Adler and Dr. A. Magora	An investigation of individuals with low back pain syndrome: to study relationship between selected occupations and the LBP syndrome, including the epidemiology of LBP; any eventual relationship, i. e., cause and effect, between the change of occupation and LBP; mental attitudes toward pain, physical disability and re- adjustment; existing preven- tive measures in occupations especially prone to cause LBP and to evaluate their effectiveness.
Israel VRA-ISR-16	Beith Loewenstein, Rehabilitation Center of the Worker's Sick Fund (Kupath Cholim) Raanana, Israel	Determination of the amount of physical exercise permitted at a given cardiovascular condition in arteriosclerotic patients suffering from heart and brain disease. (Project cancelled before completion).
Israel VRA-ISR-17	Heart Institute Tel-Hashomer Hospital Tel-Hashomer, Israel	Research to test the possibil- ities for the training and em- ployability of handicapped

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	Drs. Yitzchak Kariv and Jan Kellerman (Continued)	persons, mainly cardiac cases (mitral valvular disease after commisurotomy and coronary artery disease) in various branches of agriculture, such as tree nursery, vegetable growing, bulb and flower cul- tivation and beekeeping.
Israel VRA-ISR-18	Ministry of Labour Division for Youth and Vocational Education Jerusalem, Israel Dr. Oded Messer	Establishment of an experi- mental observation center for the occupational rehabilitation of handicapped persons to provide occupational and vo- cational guidance to handi- capped persons who cannot be placed in training or em- ployment without observation under work conditions.
Israel VRA-ISR-19	Beith Loewenstein Rehabilitation Centre of the Worker's Sick Fund (Kupath Cholim) Raanana, Israel Dr. Ludwig Guenzberg	The influence of cultural background, education and state of cultural assimilation on the results of rehabilita- tion. People working in re- habilitation have noticed that the more simple a person's native culture, the more prob- lems there are in achieving rehabilitation in Israel. The purpose of the project is to relate this tendency to de- grees of motivation, which vary according to cultural background.
Israel VRA-ISR-20	Hadassah University Hospital and Hebrew University, Hadassah Medical School Jerusalem, Israel Prof. Emil Adler, M.D.	Survey of hemiplegics and the rehabilitation of hemiplegics in Israel to provide: an evalu- ation of incidence and pre- valence; data concerning the psychological and psycho- sociological response to hemiplegia; and information on speech involvements, re- sulting mental and emotional conditions, and data for re- habilitation planning.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
Israel VRA-ISR-21	Research Laboratory for Cardio-Vascular Disease Government Hospital "Donolo" Jaffa-Tel-Aviv, Israel Dr. Daniel Brunner	Investigation of the influence of body activity on the physical and vocational rehabilitation of coronary patients, includ- ing appropriate biochemical and electro-phoretic investi- gations to determine the con- nection between cholesterol and other lipids with the inci- dence of myocardial infarc- tion in middle-aged people.
Israel VRA-ISR-22	Department of Rehabili- tation of the Ministry of Defense The Israel Foundation for Infantile Paralysis (ILANSHIL-POLIO) Tel-Aviv, Israel Dr. Ralph Spira	To investigate the influence of sports on the rehabilitation of paralytic subjects to de- termine: the influence of sport activities on psycho- logical and vocational ad- justment; the approximate cost of sport activities as used for the purpose of re- habilitation of the disabled; and the most suitable equip- ment to be used in sport practices among paralytics.
Israel VRA-ISR-23	Israel Association for Rehabilitation of Mentally Handicapped Children (AKIM) Tel-Aviv, Israel Dr. E. Chigier	An investigation of ways to rehabilitate mentally handi- capped adolescents for em- ployment in agricultural and related industrial occupa- tions.
Israel VRA-ISR-24	The Association of the Deaf and Mute Tel-Aviv, Israel Dr. N. Sade-Sadowsky	To assess the training poten- tialities of 14-18 year old deaf persons in diamond cut- ting and polishing and in carpentry. To demonstrate that deaf people are a source of reliable manpower for the continuously expanding indus- tries in Israel.
Israel VRA-ISR-25	Ministry of Labour and Israel Institute of Productivity Jerusalem, Israel Dr. David Amir	Experimentation on the em- ployment of handicapped per- sons in the textile industry.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
Israel VRA-ISR-26	Ministry of Social Welfare Jerusalem, Israel Dr. Ziev Spanier, Ph.D.	Study of the influence and importance of group psychotherapy on the work adjustment of delinquent adolescents.
Israel VRA-ISR-27	The National Rehabilitation Council Jerusalem, Israel Dr. A. Nizan, Ph.D.	An empirical study of the numbers of persons in Israel who are partially or significantly prevented from employment by virtue of their handicap and a classification of them for the purpose of identifying those who, with the provision of additional specified rehabilitation services, may be expected to become employable.
Israel VRA-ISR-28	Hadassah University Hospital Department of Dermatology Jerusalem, Israel Dr. Jacob Shanon	Investigation of methods for rehabilitating patients with psychosomatic skin disorders to: determine emotional and organic factors causing dermatosis and associated behavioral changes; analyze the relationship between subconscious motivation and specific symptoms of various psychosomatic dermatosis; interpret factors which influence the time of onset of skin conditions; and determine effective medical, dermatological, psychological, and therapeutic measures to use in the management and total rehabilitation of persons with skin diseases.
Israel VRA-ISR-29	Rogoff Medical Research Institute Beilinson Medical Center Petah Tikva, Israel Dr. Zvi Laron	A study of the rehabilitation of juvenile and adolescent diabetics in the central region of Israel, including physical, psychological and socioeconomic evaluations to determine the possibility of developing predictors of rehabilitation potential.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
Israel VRA-ISR-30	Hadassah University Hospital Jerusalem, Israel Dr. A. Magora and Dr. G. Robin	An investigation of new concepts and methods in the rehabilitation of stroke patients including evaluations of the influence of various muscle-relaxant drugs on the CVA patient; the use of new orthopedic appliances made of plastic materials; i.e., dynamic splints for the hand and orthopedic braces for the lower extremity; the various orthopedic reconstructive and corrective procedures, mainly for the hand and foot; and expected rehabilitation goals and grade of achievement in each of the preceding groups with comparisons between each and with parallel control groups.
Israel VRA-ISR-31	The Paul Baerwald School of Social Work Hebrew University in cooperation with the Israel Council of Occupational Rehabilitation Jerusalem, Israel Mrs. Monica G. Shapira	The development and testing of an experimental program of training in skills required for effective functioning of interdisciplinary vocational rehabilitation teams. Among other things to: evolve educational objectives, syllabi and methods for training members of different professions to best utilize their professional knowledge in mutual collaborative team interaction in rehabilitation work; develop reliable and valid instruments for assessment of knowledge, attitudes and interactional behavior associated with performance in an interdisciplinary team situation; and investigate the interrelationship between the cognitive, affective and behavioral components of learning and attitude change while acquiring skills required for effective

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	Mrs. Monica G. Shapira (Continued)	tive interdisciplinary team functioning.
Israel VRA-ISR-32	The Hebrew University Jerusalem, Israel Dr. I. M. Schlesinger	Investigation of the potentialities of visual communication systems for the rehabilitation of the deaf. Specifically to: analyze and describe the Israeli sign language; conduct experiments in teaching Israeli sign language to hearing persons and to experiment on the translatability of Hebrew tests into sign language; and develop and experiment with instruction in sign language to adult deaf students.
Pakistan VRA-PAK-1	Post Graduate Medical Center Jinnah Central Hospital Compound Karachi, Pakistan Dr. Shaukat Ali Syed	An epidemiologic study of cardiovascular disease to determine certain valid aspects of the cardiovascular status of the adult population of Pakistan.
Pakistan VRA-PAK-2	Post Graduate Medical Center and Jinnah Hospital Karachi, Pakistan Dr. K. Zaki Hasan	Investigation of the medical, psychological, social and cultural aspects of mental retardation affecting the rehabilitation of mentally retarded persons, employing multidisciplinary methods and techniques. Among other things, to determine whether there is any correlation between ethnic origin, climate, diet, obstetrical practices, blood group and cultural attitudes to the incidence of mental retardation.
Pakistan VRA-PAK-3	United Christian Hospital Lahore, West Pakistan Dr. Robert W. Dunlap	Investigation of methods for the rehabilitation of persons with orthopedic disabilities resulting from neurological, muscular, bone and joint conditions.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
Pakistan VRA-PAK-4	The West Pakistan Society for the Rehabilitation of the Disabled Mayo Hospital Lahore, West Pakistan Dr. Manzur Ahmad Khan	Establishment of an experimental center for the fabrication and fitting of artificial limbs and braces and for the training of disabled persons in the uses of these devices.
Pakistan VRA-PAK-5	The West Pakistan Society for the Rehabilitation of the Disabled Lahore, West Pakistan Dr. Manzur Ahmad Khan	The establishment of a multi-disciplinary rehabilitation research and training center for the orthopaedically disabled in West Pakistan.
Pakistan VRA-PAK-6	King Edward Medical College Lahore, West Pakistan Dr. Bashir Ahmad	Establishment of a pilot research and training center for the rehabilitation of persons with Parkinson's disease. To apply new rehabilitation techniques in the management of patients suffering from Parkinsonism.
Pakistan VRA-PAK-7	Orthopaedic Department Civil Hospital Karachi, West Pakistan Dr. A. Rahim	Establishment of a comprehensive rehabilitation program for the orthopaedically handicapped including studies of their medical, psychological, social and vocational needs.
Pakistan VRA-PAK-8	Jinnah Postgraduate Medical Center Karachi, Pakistan Dr. Shaukat Ali Syed	Establishment of a comprehensive research and rehabilitation program for persons with various forms of heart disease. Part of this study will involve a determination of the risk factors associated with the development of these diseases, and an exploration of measures which may reduce morbidity and mortality in the high risk subjects.
Pakistan VRA-PAK-9	The Adult Blind Centre Karachi, Pakistan M. H. Tyabji	Development of rehabilitation methods and techniques for the training of blind adults for competitive employment and

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	M. H. Tyabji (Continued)	determination of the feasibility of setting up job placement and follow-up upon completion of their training.
Pakistan VRA-PAK-10	Postgraduate Medical Center and Jinnah Hospital Karachi, West Pakistan Dr. Z. K. Kazi	Investigation of medical, psychological, social and vocational techniques to use in the rehabilitation of paraplegics in accordance with local conditions.
Pakistan VRA-PAK-11	The Association for the Welfare of the Adult Deaf and Dumb Karachi, West Pakistan Mr. M. Y. Butt Honorary Secretary	Establishment of a pilot rehabilitation research and training program for the deaf to assess and harness the training potentialities of 16 to 20 year old deaf persons in arts and paintings, in leather and plastic work and in tailoring, cutting and sewing, etc., so that they may be gainfully employed and may become self-sufficient.
Pakistan VRA-PAK-12	Cardiovascular Research Section Jinnah Postgraduate Medical Center Karachi, Pakistan Dr. Shauket Ali Syed	Studies of the efficacy of corrective heart surgery on the psychological, social and vocational status of patients with rheumatic heart disease to study the pre-operative psychological, social and vocational status of patients with rheumatic heart disease and to determine the influence of these factors on the success or failure of rehabilitation of post-surgery patients.
Pakistan VRA-PAK-13	West Pakistan Health Department, the Mental Health Association and the Government Mental Hospital Lahore, Pakistan Dr. Muhammad Rashid Chawdhry	Establishment of a half-way house and day-night rehabilitation unit to study methods of rehabilitating mentally ill patients.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
Poland VRA-POL-1	Orthopedic Hospital and Clinic Poznan, Poland Prof. Wiktar Dega	To determine methods re- quired and rehabilitation services needed to enable young people disabled by ar- thritis to return to useful liv- ing in the community.
Poland VRA-POL-2	Rehabilitation Medical Academy Warsaw, Poland Dr. Marian Weiss	Development and application of new rehabilitation methods, including the development and application of new techniques for the immediate fitting of prostheses to amputees fol- lowing surgery.
Poland VRA-POL-3	Rehabilitation Medical Academy Warsaw, Poland Dr. Marian Weiss	An analysis of neuromuscu- lar coordination in individuals with motor organ injuries and its practical application in rehabilitation.
Poland VRA-POL-4	The Hanka Sawicka Rehabilitation Sanatorium Narutowicza, Poland Dr. Aleksander Nauman	Investigation of the work ca- pacity of stabilized tubercu- lous patients requiring a change of occupation and establishment of criteria for evaluation and predictability of their successful adjustment in employment.
Poland VRA-POL-5	State Sanatorium for Neurotics Warsaw, Poland Dr. Tadeusz Gnat	Study of the influence of re- habilitation upon schizophre- nics emphasizing degree and type of psychological defect in schizophrenics; change from hospital environment to a therapeutic community type environment; and the impor- tance of psycho-pharmacolo- gical preparatory manage- ment in the first phase of re- habilitation.
Poland VRA-POL-6	State Sanatorium for Neurotics Warsaw, Poland Dr. Kazimierz Jankowski	An investigation of physio- logical factors effecting the rehabilitation of chronic men- tally ill persons. Specifically to investigate the dynamics

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	Dr. Kazimierz Jankowski (Continued)	of the adjustment processes occurring in the following systems: muscular, central nervous, autonomic nervous, cardio-vascular and endocrine occurring during the rehabilitation of chronic mentally ill persons and to determine the prognostic value of physiologic factors in combination with psychological, psychiatric and social factors for the purpose of assessing patient's success or failure rehabilitation.
Poland VRA-POL-7	The Central Circulatory Diseases Center Warsaw, Poland Prof. Zdzislaw Askanas	Investigations into the effect of medical rehabilitation and therapeutic procedure on vocational rehabilitation of patients with recent heart infarct. The rehabilitation study model consists of three stages: hospital rehabilitation; rehabilitation outside the hospital walls, in sanatoria or at the patient's home; and outpatients' rehabilitation. In all stages all forms of rehabilitation will be applied to various degrees according to the illness' dynamics or to the patient's circulatory sufficiency.
Poland VRA-POL-8	Research Center of the Invalids' Cooperative Union Warsaw, Poland Boleslaw Trampczynski	Development of methods and techniques for the rehabilitation of the mentally retarded in the Invalids' Cooperatives and in other places of employment in Poland including the preparation of a manual with guidelines and procedures that prove successful.
Syrian Arab Republic VRA-SYR-1	Syrian Foundation for the Blind Damascus, Syrian Arab Republic Mr. Faez Chalati	Establishment of an experimental agricultural vocational center to investigate ways of rehabilitating blind and partially sighted persons as

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	Mr. Faez Chalati (Continued)	farmers and handicraft workers in the rural areas of Syria; to determine the variety of occupations which can be successfully performed by blind people; and to prepare agricultural and vocational instructors to work with other associations of the blind in the Provinces.
United Arab Republic VRA-UAR-1	Ministry of Social Affairs in cooperation with The Cairo Rehabilitation Centre Cairo, UAR Dr. Zelira Abdin	To investigate methods for the rehabilitation of youths disabled by heart impairments by providing comprehensive rehabilitation directed services experimentally to a selected group of heart patients, for comparison of results with those of a control group that will not receive such rehabilitation services.
United Arab Republic VRA-UAR-2	Ministry of Social Affairs and the Demonstration Center for the Blind (Zeitun) Cairo, UAR Dr. Salah-El-Din El Hommosanni	Experimental program for the rehabilitation of the blind in their villages and in rural areas of the United Arab Republic. To experiment with ways of rehabilitating the legally blind as farmers and handicraft workers throughout UAR to become economically independent and fully integrated into the educational, social and vocational life of their families and rural society.
United Arab Republic VRA-UAR-3	The Ministry of Social Affairs and Faculty of Medicine Cairo University Cairo, UAR Dr. Salah-El-Din El Hommosanni	To develop a center wherein the investigation of new prosthetic and orthotic devices can be carried on. To investigate and develop the use of new and domestic materials for fabricating prosthetic and orthotic devices and to explore new techniques in their manufacture.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
United Arab Republic VRA-UAR-4	University of Heliopolis and Demonstration Center for the Blind (Zeitun) Cairo, UAR Dr. Abd-El Mohsen Soliman	Establishment of an optical aids clinic to demonstrate the use of modern visual aids to improve the visual acuity of persons with very low vision or who are currently classi- fied as blind in order to in- crease their opportunities for employment.
United Arab Republic VRA-UAR-5	Ministry of Social Affairs and Manyal University Hospital, Faculty of Medicine Cairo, UAR Dr. Salah-El-Din El Hommosanni	Establishment of a rehabilita- tion and training center for persons with Parkinson's dis- ease and allied disorders.
United Arab Republic VRA-UAR-6	Ministry of Social Affairs Cairo, UAR Dr. Yehia Darwich	An investigation of the voca- tional rehabilitation potential of the mentally retarded in relation to the economic, so- cial and employment structure of the city of Cairo and by reference to the United Arab Republic.
United Arab Republic VRA-UAR-7	Ministry of Social Affairs Assyout University School of Medicine Assyout, UAR Dr. Salah-El-Din El Hommosanni	To develop effective ways to provide vocational services concurrently with medical services available from medi- cal schools, and social and other services provided by private community agencies in order to prepare handi- capped people for employ- ment. To establish a pros- thetic and orthotic research and training workshop, par- ticularly for the development of prostheses and orthoses best suited for agricultural environments.
United Arab Republic VRA-UAR-8	Ministry of Social Affairs and Egyptian Associa- tion for the Welfare and Rehabilitation	To develop methods and tech- niques for evaluating the needs and capacities of the deaf and to investigate new

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
(Continued)	(Continued) of the Deaf Cairo, UAR Mr. Ali Abdel-Ghaffar	types of industrial employ- ment opportunities in the UAR which would be suitable for the deaf.
United Arab Republic VRA-UAR-9	Ministry of Social Affairs and the Society of The Friends of Cardiac Children and Youth (Pyramids, Giza) Cairo, UAR Mr. Ali Abdel-Ghaffar	An investigation of methods, techniques, and processes necessary to prepare cardiac handicapped youth for open and sheltered employment through prevocational, voca- tional and other training and for placing them in suitable employment.
Yugoslavia VRA-YUGO-1	Institute for Tuberculosis of the Republic of Serbia Belgrade, Yugoslavia Dr. Manojlo Laban	An investigation of rehabili- tation methods to use with pa- tients disabled by tuberculosis in a program of medical treatment and work therapy both in the hospital and on the job.
Yugoslavia VRA-YUGO-2	University of Zagreb Institute of Phonetics Zagreb, Yugoslavia Dr. Petar Guberina	Case studies in the use of restricted bands of frequen- cies in auditory rehabilitation of deaf individuals. This re- search project is coordinated with a similar project con- ducted at Ohio State Univer- sity, Columbus, Ohio, U.S.A.
Yugoslavia VRA-YUGO-3	The Federal Rehabilita- tion Institute Prosthetics and Orthotics Center Belgrade, Yugoslavia Dr. Miroslav Zotovic	Development and application of new rehabilitation methods and techniques in the fields of prosthetics and orthotics.
Yugoslavia VRA-YUGO-4	The Institute for Mental Health Belgrade, Yugoslavia Dr. Slavka Moric- Petrovic	An investigation of the reha- bilitation potential of psy- chiatric patients and develop- ment of methods to use in the rehabilitation of these dis- abled people.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH AND
DEMONSTRATION PROJECTS IN FOREIGN COUNTRIES
(Continued)

COUNTRY AND GRANT NUMBER	SPONSORING ORGANIZATION AND PROJECT DIRECTOR	PURPOSE
Yugoslavia VRA-YUGO-5	Institute for Treatment and Rehabilitation of Persons with Heart and Lung Disease and Rheumatism Thalassotherapia, Opatija, Yugoslavia Dr. Cedomil Plavsic	Studies of the rehabilitation potential of individuals with coronary artery disease, in- cluding investigations of: causes of early incidence and measures for prevention; environmental factors affect- ing behavior of patients; in- fluence of climatic conditions on the patient's adaptability to strain; effect of metabolic and nutritional factors; and effectiveness of physiothera- peutic measures involving graduated physical exercise and training.
Yugoslavia VRA-YUGO-6	Institute "Mihajlo Pupin" Belgrade, Yugoslavia Dr. Rajko Tomovic	Experimental program for de- velopment of the Beograd electronic hand, cybernetic arm and locomotion studies. An externally powered an- thropomorphic artificial hand will be redesigned, construct- ed, and functionally evaluated; a cybernetic arm will be de- veloped for guiding the arm of paralytics on an optimal path between the starting and end- ing point of any given motion; and a computer logic will be developed to supply electrical impulses to the muscles con- tributing to various basic hu- man gait patterns, in order to provide paralytic patients with limited voluntary walking capability.
Yugoslavia VRA-YUGO-7	Federation of the Deaf of Yugoslavia Belgrade, Yugoslavia Mr. Dragoljub Vukotic	Establishment of an experi- mental vocational guidance and personal adjustment cen- ter for the deaf.

AN ANTHOLOGY OF READINGS ABOUT BLINDNESS

By C. Warren Bledsoe

In this decade those who serve the cause of blind people talk occasionally about a book of readings on the subject of blindness. Some people who envisage such a book speak of it as an anthology, which the dictionary says is "any collection of literary works, in verse or prose or both, representative of an age, a national literature, a literary type, an author, or the like."

Perhaps more valuable than any great book of readings would be the exercise of deciding what should be included in one and what left out. A variety of essay-recipes might be composed by those who are heard out at the many conventions in the modern world where matters pertaining to blindness are discussed. From what is said, we may suppose that such essay-recipes would have great variety, backed up by specific differences of opinion. For to say what should be in a great book of readings on blindness is to open up every classic issue which has been debated since words on the subject of blindness have been spoken and recorded.

First, is it fair to blind people to "segregate" them by making a great book of readings about "blindness"? Does this not violate an eternal commandment to "treat them like everybody else?"

Next, who are "the blind"? Among them should the "partially blind" or "partially seeing" be included?

Then should an anthology try to cover every aspect of the subject or only those aspects which have been given truly excellent management in language? Would excellent management consist mainly of clarity and reality? Or should eminence of prose style and logic be required?

And what about truth—or what the editor holds to be the truth? If he is to allow those the world considers his worthy opponents a day in court, what about such among them as he considers frauds? If they have commanded the attention of large segments of workers for the blind in an epoch, will something be lost if their errors are treated as though they never existed and consigned to oblivion by being ignored?

And what of those who write like angels of what was never angelic in fact, however sincerely they believed in the illusion they describe? Are their works to go out to meet the general reading communities (even reading communities of scholars) without "ifs" or "buts" from someone whose interest is a little deeper, even if narrower, than the general reader?

Each of these questions, and particularly the last, suggests introductions, explanations, footnotes and afterwords by an editor, editors or a committee of editors. Which should it be? Can a committee do an anthology in the field of work for the blind? Is it not inevitable that a troika will come into being which will automatically exclude everything not deadly conservative, or deadly radical?

What in fact is the difference between the "classic" and the "deadly conservative"?

How can the "politics of the field"----unspoken, but most subtly understood----be excluded? ("You get something about my agency in, and I'll get something about yours.")

And how to deal with innocent-voiced denials that any of the above problems are real, except in the minds of troublemakers, or statements that it would really be quite easy to get consensus from a "truly knowledgeable group of well-selected people"? (Again the words need not be spoken to be understood.)

Then there is the question of including no "radicals who are alive and warm, though the dead who are still alive in spirit may be all right."

And should any contemporary essays be included? How long does it take before we can be sure that values of the moment have not bedazzled us over a piece of literary composition?

How to deal with the duels which each creative work worthy of the name brings upon its author and latter-day defenders?

Might it be possible to manage all these difficulties by calling for nominations for inclusion, each to be accompanied by a thorough-going justification by an earnest sponsor who believes in the item with a certain amount of passion?

Or would it turn out that on this basis there were no passion at all?

Or would the free-for-all spirit destroy the very essence of the great book formula?

Is a "great book formula" a basic error in itself? Should there instead be a "commonplace book" about blindness?

Is there some old "great book" forgotten by the world, which should now be reprinted? And among recent books is there an anthology of the "contemporary. or almost contemporary"?

In 1894, William Harris published "Literature on the Blind," perhaps the most objectively presented book of readings ever put before the world on any subject. It consisted of two volumes of quaint and curious 18th and 19th Century essays, simply reprinted, as originally presented to the world, even to the separate numbering of pages of each essay. Except for furnishing a table of contents, the editor intervened in no way whatsoever, even declining to help the reader find his place easily by numbering pages consecutively throughout. The table of contents was contained in a list of books which did double duty as a bibliography of books on blindness worth mentioning—but not all of which

were included in the two volumes. Those included carried an asterisk next to their titles in the list, from the sequence of which they could be located with some thumbing. Though this work is awkward to handle, there seldom has been a less officious editor, or one who so abhorred meddling with the way an author had written. The result is, if nothing else, an extraordinary museum of essays.

Contemporary essays of 1938 appear in two volumes edited by Helga Lende under the title "What of the Blind?" published by the American Foundation for the Blind. Another contemporary group, with the title "Blindness," was edited by Zahl in 1950.

It is a little difficult to know to what extent these books are read. Unquestionably scholars take to them on specific subjects from time to time. But neither has become the kind of book which is thought of as covering the subject of blindness basically, in a way to which a scholar might return as a Bible (or book of books) on blindness while his knowledge of the subject deepened.

In guessing why such should be the case, we should take account of an isolation which bedevils all who try to deal with problems of blindness. Comparatively few people are at work in this field. Even for books on subjects of more general (and in fact more cheerful) interest the world waits a long time, exchanging experiences by informal means, as witness, Walton on angling and Spock on babies. Indeed princes had been at their games for quite a few centuries before Machiavelli told all.

Those who deal with problems of blindness are often isolated almost as primitive man is isolated and have found how much slower progress comes that way, especially in the face of the awe-inspiring challenge of trying to find out how mankind in any age functions without sight. The isolation occasioned because numbers are few is compounded by an isolating factor of quite a different kind: there is a natural inhibiting force in nearly all people with sound eyesight which causes complete and total avoidance of the subject if possible. Nothing could produce isolation, or segregation of blind people more effectively, especially as the inhibition is very frequently unconscious, or if conscious, accompanied by shame.

To make matters worse, it is classic theory that the assembling of a cluster of blind people and their helpers too often seems to yield more in the way of morbid psychological undertow than constructive proposals for managing the problem.

And thus we come full circle to the original question: "Is it 'fair' to blind people to segregate them by making a book about 'blindness'?"

Those who think it is not fair are likely to read no further, if they have read this far, and, moreover, will obviously not give attention to suggestions for compiling a book of readings.

Here, however, it is necessary to digress and say they can generally be counted on to quarrel with suggestions made by others, and sometimes astutely. In any case, the conscientious (or unscrupulous) objector to making blindness "special" must always be kept in mind----if for no other reason

because he is a most attentive detector of slips and errors. Though it would be foolish to attempt to involve them in the creative process, nevertheless, classic writings illustrative of such thinking might well be included in such a book as might be brought to pass. A letter by Howe in 1871 objecting to a convention of educators of the blind is a most perceptive example of such writing. The many forms which this kind of aversion has taken are so recurrent a phenomenon in the history of ideas concerning blindness that it should be given both visibility for the sighted and audibility for blind people.

Quite often, however, visibility is the last thing such a point of view seeks. Its perfectly consistent strategy is adroitly insidious, namely insistence that there is no literature on blindness worth bringing before the world. For those who prefer to learn without reading books this sounds like the sweet truth. To those familiar with the literature it seems a classic example of the big lie. Whether or not it is a big lie, it is simply not truth, as evidence of which appended to this article is a suggested table of contents. This offers a nucleus which could doubtless be improved by additions or subtractions, but to those familiar with work for the blind the authors are at least an articulate band of thinking people whose meditations on blindness really ought not to be ignored by the youth of the field, or indeed people of any age: Tadiso Yoshimoto, Dennis Diderot, Samuel Gridley Howe, Laura Bridgman, Francis and Sophia Campbell, Edward Allen, Sir James Crichton-Brown, Alfred Hollins, Jacques Koloubvsky, Emile Javal, S. M. Green, Helen Keller and Anne Sullivan Macy, Pierre Villey, Thomas Cutsforth, Harry Best, Helga Lende, Rev. Thomas J. Carroll, Gabriel Farrell, Richard E. Hoover, Berthold Lowenfeld, Alan Gowman, Louis Cholden, Allen Eaton and Mary Drange Campbell.

To gather the works of such people in a useful book, as has been indicated, would offer many problems, but their solution may well be one of the most important obligations of those who believe that blindness is a subject about which there is something to know.

Answers to all questions which have been suggested are not at hand, but it is safe to assume that they can only be resolved by some kind of balance between organizing, practicing, compromising talent on one hand and "blindiana buffs" on the other. The stormy passage might well resemble in little George Washington's most difficult war, which was not the American Revolution, but his battles with L'Enfant over planning the city of Washington and putting the plan into execution. Few people now realize that those things which are most admired in the nation's capital came of a drama in which the wisest and most temperate of patriots was tested to the ultimate by a being consecrated to aesthetic excellence. In the end there was highest artistic dudgeon, fracture and irreconcilability. But the city was planned. Thus also with the encyclopedia of Diderot, who, discovering how his publisher had saved him from his own rashness by altering the text, never spoke to the fellow again.

Nevertheless, the care and treatment of enthusiasm has long been a primary task of workers for the blind, who have developed some experience in the matter, and should be able to find a way to get an anthology, however, anfractuouse the course.

With the hope of stimulating such people to do likewise, the following design for an anthology is offered:

- Item 1. "Past, Present and Future of the Blind in Japan"
(starting with 858 A.D.) Tadiso Yoshimoto
- Item 2. Selections from the historical writing of Ishbel Ross in "Journey into Light." (May be interspersed through anthology.)
- Item 3. Dennis Diderot "Letter on the Blind."
- Item 4. Basic Writings of/and about Samuel Gridley Howe
- Selections from Harold Schwarts Biography (including Note on Ms. Sources.)
- Howe's: "Sketch of the Rise and Progress of the Institutions for the Blind in the U. S."
- 1949 Annual Report of Perkins Institution
- Batavia Address
- Selections from 1867 Annual Report of Perkins Institution (co-authored with Dr. Edward Jarvis)
- Commentaries on Principles and Practices from Perkins Institution Annual Reports '68 through '73
- Letter to Mr. Churchman Re AAIB Convention of 1871 (From Perkins Annual Report)
- Item 5. Basic Writings of/and about Francis and Sophia Campbell
- Edward Allen's "My Recollections of the Royal Normal College after 60 Years."
- Testimony before Royal Commission, 1889
- Sir James Crichton-Brown's "The Education of the Blind"
- Sophia Campbell's "Social Training of the Blind" 1911
- Sophia Campbell's "Schools and Other Agencies for Assisting the Blind in Great Britain and Ireland"
- Selections from Alfred Hollins' Autobiography
- Item 6. Edward Allen's "Impressions of Institutions for the Blind in Germany and Austria" 1911
- Item 7. Jacques Koloubvsky's "Work for the Blind in Russia" 1911
- Item 8. Émile Javal. "On Becoming Blind" 1904
- Item 9. S. M. Green. "The Technical Training and Industrial Employment of the Blind in the United States." 1908

- Item 10. Edward Allen's "Tribute to Dennis Reardon"
Selections from other writings of Edward Allen
- Item 11. Writings of/and about Helen Keller and Anne Sullivan Macy

Selections from "The Story of My Life," "Out of the Dark," "Mid-stream," and Nella Braddys' "Anne Sullivan Macy"
- Item 12. Selections from Pierre Villey's "World of the Blind"
- Item 13. Selections from Thomas Cutsforth's "Blind in School and Society"
- Item 14. Selections from Best's "Blindness and the Blind" (Especially the Chapter on Law)
- Item 15. Selections from Lende's "What of the Blind?"
- Item 16. Selections from French's "From Homer to Helen Keller"
- Item 17. Selections from the writings of Berthold Lowenfeld
- Item 18. Selections from Zahl's "Blindness"
- Item 19. Selections from Carroll's "Blindness"
- Item 20. Selections from Gowman's "War Blind in American Social Structure"
- Item 21. Selections from "War Blinded Veterans in a Post-War Setting"
- Item 22. Farrell's "Story of Blindness" and Ishbell Ross's "Journey into Light" for historical footnotes. Farrell's chapter on the development of visual measurement devices should be printed separately.
- Item 23. Louis Cholden's "A Psychiatrist Works with Blindness"
- Item 24. Allen Eaton's introduction to "Beauty for the Sighted and the Blind"
- Item 25. Mary Dranga Campbell "The Newly Blinded"

*"He strove but could not lift the load,
Then Fate unleashed her furious goad,
And when he laid it down at last,
Three milestones and a hill were past."*

Richard Kinney

A TREATMENT PROGRAM FOR MULTIPLY-HANDICAPPED BLIND YOUNG ADULTS

By Lawrence Goodman

Introduction

Growing community concern for the severely handicapped is a significant and gratifying social trend. It reflects the deepening concern with broad public health and communal issues and the needs of the "disadvantaged" among us. There is finally readiness to look both objectively and humanistically at those who lack all or most of our culturally determined "desirable" traits and potentials. A society preoccupied with the concept of individual gain and achievement as a reward for industrious application and self-discipline has too often shown itself to be inimical, withholding, and even punitive to those who are unable to approach any of these ideals.

Any major congenital handicapping condition requires an optimal cluster of cooperating forces to help the affected individual reach a productive personal and social level of functioning. Satisfactory family reaction to the handicap, and the capacity to look beyond it to the developing child within, is, of course, the primary factor. Later - neighborhood, community, school, social agency and training center assume other key roles in the life cycle of the severely handicapped individual. Special education, medical continuity, habilitative and corrective services may all be needed in a total thrust toward optimal functioning.

Where more than one major handicap exists, the task is indeed a formidable one. When one of these handicaps is blindness, which complicates, prolongs, and adds unique problems to each developmental phase - in combination with other deficits - the immensity of the problems to be coped with can seem almost insurmountable. However, it is no longer possible to overlook the fact that such markedly handicapped individuals exist; that usually without appropriate intervention and early care they develop chronologically, if not emotionally, into adulthood, and that within an extensive, almost massive therapeutic regime they can be helped to a better level of functioning.

The Jewish Guild for the Blind has committed itself to the development of a many-phased program for the multiply-damaged, experientially deprived, insufficiently serviced group - who may or may not have the capacity for eventual independent living. Spurred on by the numbers of retrolental fibroplastic youngsters who were approaching adulthood, as well as by the change in the climate in regard to the severely handicapped which now makes it possible to receive support, a trial summer project evolved into a year round demonstration two-day program. The heartening results of that experience led to

the development of a full-time structured day service. The therapeutic possibilities within this intensive approach warrant at this time a retrospective and evaluative view of the program as a whole, its individual components, present and future goals, and general implications for planning services for all multiply-handicapped persons.

The Multiply-Handicapped Blind

Using the 20/200 criteria, the blind population of the United States was estimated in 1963 as 400,000, or an average of 2.14 blind persons for each 1,000 of the population.¹ Approximately 10% of these are under the age of 21, the majority of whom were blinded at birth or at an early age. Included in this group are the approximately 12,000 youngsters who were congenitally blind as a result of retrolental fibroplasia, resulting from an over supply of oxygen in the care of premature babies. No longer (since 1953) a cause of blindness, the surviving RLF children are now approaching adolescence and young adulthood. Some have matured reasonably well, others have developed severe associative difficulties. According to Moor², these children may be said to be "multiply-handicapped," with additional difficulties that may be of an intangible nature. They have variously been described as "autistic", "mentally deficient", "psychotic", "aphasic", "emotionally disturbed", and/or "brain damaged". They have not fit into existing school and agency programs. Blank³, feels that the factors chiefly responsible for the high incidence among RLF children are those stemming from premature birth and brain damage. As a result of difficulties in communication, irregular learning patterns, frequently impaired emotional responsiveness, and many disturbing symptoms, these children present overwhelming problems to parents and professionals. Cohen⁴, reporting on a longitudinal study of RLF children done at Northwestern University correlates the organic damage with prematurity rather than oxygenation. The resulting neurologic impairment was none the less a major correlate of behavioral retardation. According to Cohen, vision is the dominant system for perceptual integration. The psychological consequences of limitation in perceptual and learning experience when interacting with the consequences of minimal brain damage, can produce severe intellectual retardation.

An additional major contributing factor to the challenge that we now face has been the failure of the community to understand the nature and severity of the problems presented and to provide the network of counseling and educational services that might have mitigated the extent of the symptom formation that must now be dealt with in the older child and young adult.

Factors in Congenital Blindness

Blank⁵, states that the ego-development of the congenitally blind child depends primarily upon the physical contacts, consistent communication and other components of mother love. Burlingham⁶, indicates that the blind infant needs more than the usual stimulation from the mother in order to respond to her. Imamura's study of the child rearing of blind children, concluded that those who had experienced a "normal" maternal environment tended to make social adjustments similar to those of sighted children of the same age.

In order for a mother to be able to fill this role requires a stability, consistency, persistence, and intuitiveness that is out of reach of most parents as they react with shock and sense of crisis to the diagnosis of blindness. Feelings of self-doubt and inadequacy may be reactivated as the parents view the damaged child as an extension of themselves. Anger, hostility and guilt over what has happened plus the threat to their own ego and self-image at the prospect of a lifetime of concern for the needs of a handicapped person and continuing emotional reaction to it, cause severe psychic turmoil. Defensive reactions and displacement of anxiety can result in denial, over-protectiveness covering over-rejection of the blindness, and, most importantly, an inability to relate in positive affectual terms. Even in situations where parents may seem to be reacting to the child's needs what has been termed "masked deprivation"⁸, may be operating. The inability of the mother to look through the blindness and perceive the child can result in a lack of genuine maternal warmth and stimulation. The blind infant, with an even greater need for the mother's nurturance than a normal child, may be doubly deprived and unable to advance developmentally.

Other mothers are able to establish good bodily relationship with their blind child through handling and care, but according to Wills⁹, are unable to fulfill the role of an auxiliary ego by providing him with meaningful experiences of the world, which is something that the mother of a sighted child can do automatically on the basis of her own experience. The blind child responds with a tendency to revert to direct bodily gratification. "It may be that the withdrawal seen in some blind children stems from the mother's failure as auxiliary ego so that the children are unable to cathect and organize their world. These mothers do not necessarily fail in their first role, the immediate relationship with the child."¹⁰

The Challenge in Treatment

The resulting combination and interaction of visual and organic deficit, confusion among parents and professionals, and lack of comprehensive care facilities, led to the growth of what has been called a "lost" group within the blind population, whose developmental histories are so bleak, as a result of misunderstanding the child's needs at successive levels, that they might seem hopelessly incapable of significant improvement.¹¹ Many of these children were placed in institutions for the retarded. (According to Parmelee¹², 25% of all the blind in California are in such institutions.) Once institutionalized, the continuing lack of sensory stimulation and tactile experience usually leads to further retardation and withdrawal, often with autistic-like behavior.

Those who remained at home were often viewed as mentally retarded and surrounded by an atmosphere of parental despair and futility. The world around the blind child which for effective growth must be maximally accepting, innovative, and supportive is not sufficiently organized. Appropriate stimuli and opportunities for experiencing are not available. He becomes increasingly frustrated and angry and may further isolate himself within his own inner reality while rejecting the external world with its continuous threat and challenge. Or he may attempt to relate to his environment through acting out his anger and need for attention in an infantile way that may continue through adolescence.

The severity of the problem, the guarded prognosis, the often limited goals, as well as the lack of knowledge of how to cope with them, - led to frequent rejection by community facilities. Few systematic attempts to establish corrective programs were established.

Experimental Efforts

One experimental summer program at the Michigan School for the Deaf and Blind has been recorded in the literature. (Elonen and Polzien)¹³ The majority of children serviced were RLF. They showed severe lags in mobility and general physical development. Social functioning was limited and infantile. Many were considered mentally retarded. There was severe emotional disturbance characterized by withdrawal, impulsivity and violent aggressive rages. The experimental program, which provided a consistent therapeutic milieu showed that dramatic change was possible in youngsters who had been considered unreachable.

The Jewish Guild for the Blind also conducted a summer program for a group of 37 multiply-handicapped blind children and young adults, who had been rejected by all other community camping programs. The age range was broader than the Michigan experiment, from 6 to 25 years. An evaluation of the program at the end of the summer indicated that it had provided a highly successful experience for the majority of the participants. It was also found to have had unexpected values beyond the obvious ones resulting from planned recreation and creative outdoor activities. Experience gained through this method of group service led to a consideration of a continuing group centered program throughout the year for those adolescents and young adults for whom other types of service had been virtually abandoned by the community.

The Guild thereupon decided to initiate a two-day-a-week experimental program for one year for a selected number of these young people. It was recognized that even such a limited program would require a substantial investment of staff and funds and that the result might well be inconclusive. In a sense, the agency saw the demonstration as a final effort in the hope that these young people could be helped to better approach their potential level of functioning. Beginning in January 1964, a group of five young people (3 males and 2 females) were brought together to form a group for this intensive service. Within the first three months one of the girls was withdrawn because of uncontrollable aggressive behavior. Six additional young people joined the group making a total of 11 who were served for varying periods during the course of the year. All members of the group tested on the retarded level with the exception of one young man. To obtain reliable test results with the blind multiply-handicapped has always presented diagnostic problems, but it was felt that the IQ range was from 40 to 90. Two of the clients had been in an institution for the retarded - one from the age of 4 through 21 and the other from the age of 7 through 18. The range in age was from 15 to 28, the majority were over 20.

The predominant cause of blindness was retrolental fibroplasia which had occurred in four cases. The next most frequent cause was congenital cataracts, in three cases. The other causes include albinism, aphakia and optic atrophy. Four of the young people were totally blind, one had light perception only and six had some residual vision. Disabilities in addition to blindness, mental

retardation and/or emotional disturbance, which were characteristic of the group as a whole included epilepsy, heart disease, severe curvature of the spine, and organic brain damage. The economic status of the parents ranged from welfare recipients through upper middle class.

At the time the young people joined the group program, only one had any significant social activity outside the home, only one was attending a special school class (for retarded children) and only three appeared to have potential for even the most sheltered types of workshop placement.

The focus of the program was to encourage and stimulate each member in the group to use his available capacities in a variety of ways. The group met two days each week. During these days the members were engaged in group activities and were also given individual attention according to their special needs and rate of progress. The following methods were utilized:

1. Group discussions designed to promote constructive social attitudes and behavior.
2. Physical fitness - learning coordination of body movements, correction of posture and poor muscle tone.
3. Use of hand muscles with a view toward developing tactile and muscle sense.
4. Work with handicrafts, clay, instruments, etc. Learning packaging and assembly work was considered a possibility.
5. Mobility and orientation - how to get around in a room, to avoid objects, to use a cane for safety and for mobility, how to walk erectly with good posture and without mannerisms, how to use the aid of another person in being guided, and instruction in self-travel.
6. Self-management, improved social poise, learning to eat in public, personal grooming, self-care.
7. Vocationally oriented activities, such as counting, learning the use of a braille watch to tell time, and other simple work tasks.
8. Therapeutic recreational activities, such as dancing, games, stories.

Effectiveness of The Demonstration Program

Dramatic progress was made by four of the participants. Two are employed in The Guild's sheltered workshop and two are in the pre-vocational screening service as potential sheltered workshop employees. Added skills in verbal communication and mobility were of particular value for these four young adults. Significant improvement in mobility, social skills and/or verbal communication was made by four of the members of the group. These four appear to have a future potential for productive work. Minimal progress was made by the remaining three members of the group.

Some of the young adults who previously had been unable to tolerate a one-to-one relationship or whose response had been minimal, appeared to be able to profit from group relationships, group activities and group interaction, to a surprisingly hopeful degree. This type of group approach which utilized carefully planned twice weekly group sessions represented a new method of reaching these severely damaged individuals. However, experience during the year's experiment confirmed that a team of all the agency's professional staff had to be involved - psychiatric, medical, vocational, casework, social group

work and other technical staff. It also became apparent that high caliber psychiatric consultation was essential to the staff working with so severely damaged a group.

It was considered unlikely when the program was initially conceived that any significant number of the multiply-handicapped young adults in the program could succeed in even the most sheltered work situation. However, this goal was included among the objectives and it has been found that limited vocational goals are possible if highly individualized planning is carried through and a professional staff is sufficiently flexible and not discouraged by prior unsuccessful experiences.

Program Expansion

As a result of the unexpectedly encouraging results of the pilot experience, a continuing group for young adults has become a part of the agency's total service. The ability of the participants to utilize the part-time program led to the obvious recommendation of expanding its scope to a full-time daily activity. The amount of deficit with which we are dealing, as well as the lack of opportunity for testing out treatment gains in other social situations, requires an intensive therapeutic milieu which offers repeated and consistent reinforcement of every minor gain.

The Day Program, to be effective, must be a multi-phased one of social experience and activity, counseling and therapeutic services, training and habilitation. More significantly, the functioning group provides the "auxiliary ego" which, as we had previously mentioned, many mothers are unable to provide during crucial development phases. For the blind person the absence of this step may be roughly equivalent to a severe deprivation of experience. Wills¹⁴, feels that this might account for the comparatively good object relationship made by the withdrawn blind in treatment. They have cathected the human object, the mother, which makes it possible to establish meaningful contact. This cathexis, however, has not spread automatically to the inanimate objects on the mother's periphery and to the external world, as it appears to do with the sighted.

Another possible positive implication for working with the multiply-handicapped adult is the fact that performance norms may be more controlled and less exacting than with the younger person. It may be more possible to help the young adult achieve a level of success through the learning of minimal skills than was possible at school age when intellectual and experimental deficits prevented a sense of achievement in a learning situation. This later growth potential further suggests the value inherent in a many sided therapeutic approach - physical, social, psychological and vocational.

The Day Program for Young Adults

The expanded program at The Guild has been in existence for approximately a year. The primary focus has been on group experiencing. This assumes the adaptation of group work, group counseling and group training methods integrated into a unified therapeutic construct. Specific components include:

1. Group discussion meetings - three or four times weekly.
2. Arts and hand crafts - twice weekly.
3. Work "simulation" sessions - three times weekly.
4. Physical recreation and fitness - three times weekly, including one swimming session.

In addition each group member has been assigned to an individual case-worker who works with both the client and the family. Three members are receiving psychiatric therapy. Psychological, psychiatric and medical consultative services are available as needed.

The Group Meetings

The group meetings are conducted by the program coordinator who is the constant, stabilizing figure to whom group members relate. He supplies the steady, patient consistency that provides the climate which enables slow, sometimes erratic, at times regressive, ego development to occur. He must be prepared to tolerate behavior that would be inappropriate in any other group situation.

The members of this group bring with them an impoverishment of social experiences on which to draw and expand the frame of reference for all group members. Ego development has been stunted and diffused. Incorporating the environment in the growth process has been achieved mainly through hearing rather than through vision. As Burlingham¹⁵, has pointed out, "Vision keeps the mind more firmly tied to external reality, while hearing, through its connection with verbal residues, has more link with the internal world." Participants entered the program withdrawn, isolated, with confused and distorted images of self. Continuing dependence on the object world, as well as frequent parental infantilization, further damages self-esteem. There is minimal experiential background in group participation or any sense of conviction of being able to contribute to the group. It is difficult to imagine a selection of clients who appear on the surface so unsuitable for group expression and interaction. At the same time we cannot conceive of a group in greater need of such an opportunity.

The group provides a social microcosm to those who have been denied access to any acceptable societal roles. The goal of the program is not to substitute artificially the sheltered supporting world within The Guild, for the harsh rejecting world outside. Yet in the initial phase of group interaction, the group leader must serve as a bridge between the center and the demands of the world beyond, for which they do not yet have even minimal coping ability.

They must draw on a leader on the most primary basis of ego nurturance, before they can draw on each other. The leader must be sufficiently mature, with a multitude of conviction, to let himself be used in this way consistently. As social growth proceeds, the group members begin to individuate, they concurrently start to develop group identity. There are, of course, qualitative differences. Progress is not consistent. As Nagera and Colonna¹⁶ indicate, the blind child seems incapable of leaving behind previous phases when a new developmental move occurs. "It may perhaps be concluded that blindness can so much interfere with finding new means of gratification both in drive discharge and ego activities that any form of gratification once experienced is

not easily abandoned or left behind." This is often evident within the group and is handled gently and repetitively by the leader at first - augmented later by advanced group members.

The individuals within the group reflect a range of visual and organic damage, intellectual functioning, and emotional stability. The amount of disturbance does not necessarily correlate with the extent of residual vision. Some participants move much more readily toward a semblance of independence and readiness for vocational training. Others, while making gains in social behavior and mobility, may not reach the point of movement out of the core group. With members at different levels, this introduces a significant dynamic force to the group action which the group leader can use productively. The higher functioning members - as they are permitted to support and show concern for those less adequate - may for the first time feel a sense of genuine achievement and success. The others, for whom goals may be much more limited, benefit from the accumulation of concern and attention. The leader is available to prevent perpetuation of an overly passive dependent pattern.

The group sessions are structured and broken down to successive sequence. However, within this general structure there is much latitude for spontaneous discussion and introduction of subjects and problems by individual members. There is, of course, less give and take than in other groups. Many times there appears to be a "parallelism" in the discussion - even though all may be relating to the same subject - with what appears to be minimal and sporadic interaction. However, we must not lose sight of the built-in layers of inwardness which members are struggling to break through. Some members may appear unrelated and may not seem to be participating directly in the discussion for many months but later show evidence of having absorbed meaningful concepts from the group. This recalls Burlingham's statement that the blind. . . . "frequently appear to be fully withdrawn into passivity when in fact behind this facade there is an extremely active listening and a close attention to what goes on in the environment."¹⁷

The group sessions are the nucleus of the treatment program. They provide the continuity, content, and process for self-identification and ego-growth which permits utilization of the other program components.

Therapeutic Goals of the Group Sessions

The many levels of group interaction in the expanded day program permit, within a total therapeutic milieu, a flexible and individualized set of treatment goals - therapeutic, rehabilitative and educative. The most damaged members of the group will have to progress through a phase of primary socialization and re-education before meaningful relatedness is possible. Others with higher intellectual levels, less emotional disturbance, and/or usable vision will be able to take from and contribute to the group process more readily and on a higher level.

The major therapeutic goals become:

1. The development of a sense of self and the emergence of ego identity. The deficient and distorted self image results from intellectual deficits, visual and cognitive impairment, the impoverishment of social stimuli, repeated failing experiences, and the conscious and unconscious rejection by family and community.

2. Improved Capacity for reality testing. The group member must be helped to move out of the inner and very personal world that he had created as a defense against his incapacity to cope with the demands and standards of the environment.
3. Increased Awareness of feelings. This enables not only the encouragement of positive responses as a way of expanding object relationships and breaking through inner directedness - but also the expression and control of repressed hostility and anger.

In order to approach these therapeutic goals with clients whose potential for verbal insight is so limited, it is necessary to introduce other methods of achieving therapeutic change. Repeated and re-emphasized growth experiences in a supportive interpersonal setting is therefore the primary element of the treatment program. The "me too" response - as the group member unaware of or unable to express his own feelings - can recognize himself in another group member, is an important aspect of self development. Within the group, the client's rigidity, passivity and perseveration can be penetrated through identification with the experience and responses of others and additional ways of reacting to and meeting problems, challenges, and deficits. Individual counseling, in addition to the casework goals in each situation, encourages further individuation, prepares the client for optimal group participation and aids in the consolidation and retention of therapeutic gains.

In helping members form themselves and function as a group, the leader initially, and for as long as necessary, utilizes a high degree of leadership and responsiveness. Early in the group process the leader takes the initiative in making contacts and permits those group members who cannot respond to each other to respond and interchange directly with him. Each member is treated as an important participant in the group process. In addition, however, he is dealt with as an individual with a particular set of problems - social, emotional, etiological, physical, and developmental - with individual treatment needs.

Direct change can occur when:

1. the leader is used as a model for identification.
2. the leader acts as an enunciator of rules indicating the ways in which members should behave.
3. the leader provides opportunity for reality testing of feeling and behavior.

Again, initially, the leader must be taken as a model by the group in order to be effective as an interpreter of and a guide to understanding the rules of social behavior. He must continue to act in that role until such a time as the group can at least take over partially the expression of encouragement of development and approval for socially desirable behavior, as well as condemnation for asocial actions.

Indirect change occurs when the discussion of the feeling and experiences affect the group participant's inner state and, as a consequence, results in changes in behavior. In a sense, the leader must, through his ability to emphasize, be prepared to enter the world of the blind young adult to help him structure ways of thinking about a problem. Using the feeling, knowledge and experience of all the group members as much as possible, the leader constantly

raises specific questions about how an individual feels, whether an experience has happened before, how it was handled, whether or not the situation is similar, and alternative ways of thinking about and handling problems. Through continuing repetition, group members are given an opportunity to enhance self-concept, begin to find out who and what they are, and to acknowledge strengths and limitations. The deficits, immaturity and dependency of these young people diminish the effects of learning from living experiences. Thus, efforts must be directed toward teaching through structured learning and socializing experiences, what others learn on their own.

Educational Goals of the Group Sessions

The group's therapeutic potentials provides a social education experience which is basic and ameliorative. When, as a result of the combined therapeutic interaction of all segments of the program, ego identity and an individuated self-image emerge, the need for acceptance by the group becomes a significant factor. The group becomes a controlled model for group living which enables members to draw from the power of group interaction the motivation and support for further growth and development.

The educational goals of the program are:

1. More acceptable social functioning. This includes more skillful handling of daily living activities and personal care as well as the concepts of give and take, action and reaction, in interpersonal situations.
2. Improved Communication. This introduces the concept of establishing contact and rapport - with the leader and other program members - within a group unable to incorporate visually, usually complicated by limited ability for verbal communication.
3. The achievement of greater independence, with a concomitant decrease in direct supervision. This includes a combination of greater responsibility for the blind young adult and more appropriate recognition of limitations and use of controls by parents and professionals.
4. Developing interest in, and providing opportunities for participation in expanded social and recreational experiences. The aim is to encourage members to view the world not as a frightening and inaccessible mass of darkness, but as a source of possible life enrichment and even pleasurable experience. Field trips, physical recreation, the encouragement of planned after hour activities, and the constructive utilization of all existing resources are integral elements of this phase of the program. Enlargement of the social environment, of course, also increases the frame of reference for personal and ego growth.

The therapeutic and educational aspects of the group sessions, enhanced by other program components, including individual counseling of clients and parents, form a comprehensive unified treatment milieu which is integrated and coordinated, and given continuity, by the group leader.

Arts and Hand Crafts:

The Art and Handicraft sessions have provided program members with an additional level of individual and group expression. Members work with wood,

clay and other materials. Those with sufficient dexterity are able to experience a sense of productivity and achievement which adds further support to developing self concept. Those with more limited capability are encouraged to participate to their fullest extent. Under close supervision, with help from the instructor and other group members, even the most damaged participant may feel some sense of accomplishment and satisfaction. It is most important that those who are more capable be encouraged to produce optimally. The instructor must project a great deal of patience, interest and enthusiasm in order to motivate the members to free expression. This is an important element in helping them overcome their comfortable passivity, constriction and resistance to new demands. At the same time he maintains gentle, firm control and requires active participation. This gives members additional experience in learning to meet the requirements of social living.

Vocational Programming

The experimental program resulted in several group members, who were viewed as having the most limited occupational potential, moving successfully into work training. The current program has proceeded with the assumption that the higher functioning group members may be able to move into work readiness training and eventual vocational programs. Even the most severely handicapped young adults may be able to aspire to some level of sheltered occupation. Those who will not be able to advance from the first stage of "work simulation" have been found to profit individually from the group training experience and its elements of self-disciplining and management. There is also physical gain through improved tactile and muscle sense resulting from the use of specially designed and constructed work tools and instruments that aid dexterity through the exercise of hand muscles.

Three half days are spent in "work simulation" which is an introduction to basic features of a work situation. Members are exposed to a variety of simple operations such as counting, packaging, sorting, etc. There is an introduction to the use of hand tools with stress on the previously mentioned supplementary value of these instruments for improved motor coordination.

The continuity of group activity does, of course, have therapeutic implications beyond the goals of potential job training and becomes an invaluable supplement to the planned group discussion sessions. Significant data often emerges in this more informal atmosphere which can be picked up and explored in greater depth in the group sessions.

There is flexibility in the work training program which permits members to move into other phases when ready for more specific training. Some members cannot progress beyond this phase. For those who are able, the next step is work readiness training in which clients who show vocational potential are exposed to a somewhat more demanding, directly work oriented experience. The goal of this intermediary phase is preparation for workshop training and eventual workshop employment.

Physical Recreation and Fitness

Physical "fitness" sessions are held three times a week including one swimming period, at the nearby facilities of the Y.M.C.A. The multiply handicapped

blind, often with associated neurologic and motor impairment, have had limited opportunity for physical activity. This further restricts mobility potential. Self-consciousness about being observed by others may cause further restrictive motor tension. Poor posture, an awkward gait, and limited dexterity can lead to intensified distortion of body concept and perceptual orientation. There is generally an extremely poor body image which adds to feelings of alienation and psychic disturbance.

As the program has evolved, physical recreation has come to play an increasingly important role. Group members were in the process of recognizing their individual selves as well as the individuality and interrelatedness of one another. The physical activity becomes a new and meaningful method of interacting.

As participation increased, it became apparent that there was less muscular and motor impairment than had been assumed. Working out and exercising were engaged in out of choice. The recreation leader introduced successively more involving planned activity which brought into play the concept of increasing self-awareness through controlled competitiveness. As in all other areas of programming, allowances had to be made for the less adequate members, but it was found that even the most severely handicapped could participate profitably in the physical program. Again, the dynamics of helping others, and using help constructively, were shown to have great therapeutic potency.

Parents

Understandably, bitterness, discouragement and hostility were reactions frequently found among parents burdened with the constant strain of the 24-hour a day home care of these young persons. Many of these parents, as a self-protective device, tried to deny the existence of the severe limitations of their child. Many suffered strong feelings of guilt, considering themselves responsible for their damaged offspring. Others were overwhelmed with feelings that the community did not care what happened to them or their children. Family relationships were frequently severely affected.

Professional personnel too, felt frustration and a sense of defeat when their continued efforts to evaluate these children resulted in failure. It was discouraging that many of the parents to whom individualized casework and psychiatric services were offered, appeared to be unable to effect a sufficient change in their attitudes to plan realistically for their deficient children. The efforts of numerous agencies were often focused on a child simultaneously or at different stages of his growth. Often these efforts had been abandoned as hopeless by one agency after another. Interest remained but no plan or action seemed feasible to retrieve these young adults from the emptiness of their constricted home life.

During the experimental phase of the program the parents of five of the group members were offered a 12-week group counseling experience. Each parent, or set of parents, was seen individually before the series began and again after termination of the counseling period. The parent meetings afforded the parents an opportunity to use relationship with other members and with the group leader for bringing about change in their own functioning with their children. While parents gave passive acceptance to this purpose, in reality

they came to group counseling for a variety of reasons. Some wanted to prove that they were doing everything possible as good parents; others saw this as an additional opportunity to pressure The Guild to assume more responsibility. The motivation for change in this group seemed minimal since the major drive was to have the agency assume a partial custodial role. A positive aspect, however, was the strong desire that there be some improvement for them and for their children in their living together.

The parents struggled with their own feelings of helplessness, defeatism and hopelessness. The group counselor attempted to help them find those small developmental areas in which growth and some positive change might be achieved. The parents had also expressed a strong sense of their own worthlessness. Not only had they given birth to defective children, but they had been unable to stimulate their children in the direction of normal growth. Unable to find ways of getting close to their children, some withdrew, while others, with no real awareness of their children's limitations, tried to pressure them towards normal standards. Much interchange occurred in these sessions as parents tried to help each other relieve the impact of their early experience and to face their children with less guilt, more realistic demands, and some understanding of how they now function as parents.

Other parents, during the experimental and expanded programs, have been assigned to individual caseworkers. Counseling has ranged from contact on an "as needed" basis, to intensive casework involvement. It is obvious that for optimal results, parents should participate in the treatment process. However, as we have seen, the deep layers of defense that many parents have adopted do not always make treatment possible or feasible. The decision to include a blind young adult in the program cannot be based on the availability of parents to share in treatment. The parent counseling program must be a non-rigid one which will make every effort to reach out and meet the needs of parents, when this is possible. Group counseling has often been shown to have unique values for parents of the handicapped. A larger pool of parents, resulting from an augmented program, will make it possible for those parents able to participate to have the advantage of the opportunity for group counseling. Every effort will be made to establish and carry through this important program adjunct.

Discussion and Recommendations

The essential premise underlying the day program for multiply-handicapped young adults at The Guild is that massive damage, compounded by lack of effective services at earlier life points, requires a massive therapeutic approach. The full-time program which has been in operation for more than a year has utilized the total facilities of The Guild. Personnel have included a full-time group coordinator, vocational counselors, caseworkers, craft and mobility instructors, physical recreational worker, psychological services, a consulting psychiatrist, and medical consultations and follow-ups as needed. It is clear from a review of the program that this considerable array of professional forces is necessary to carry out a comprehensive and realistic therapeutic approach to this truly deprived and disadvantaged group.

In undertaking so demanding a program the agency must be prepared to supply the intensive, five-day week therapeutic milieu that can enable the

beginning of primary ego development, personality growth, and finally, an appropriate level of social interaction. This may or may not include members who may never be capable of some semblance of independent functioning.

The program should be sufficiently broad and flexible in scope to permit:

1. long or short range participation
2. partial or complete utilization of the group matrix
3. involvement of parents in group or individual counseling determined on the basis of readiness, need, and ability to participate
4. experimental treatment supplements determined by the specific needs of each group member
5. expanded use of community services

The program that has evolved at The Guild has of necessity been a pragmatic response to client need, recognition of agency responsibility, and the problems and experiences accrued in developing an experimental and innovative program. Evaluation of component parts and effectiveness have had to be largely impressionistic.

We feel that the program has accomplished much to date and offers even greater future promise. Our present level of conceptualization of operating methods and goals: our accumulation of trial and error experience: as well as the great importance to clients, families, and the community of the services that have been offered, demand at this time, an expanded project, on a demonstration basis, with a built-in design of evaluation. Such a program would provide for the methodical gathering of analyzable data; the inclusion of a comparison group who, for various reasons, cannot participate in treatment: and for the systematic outlining of program methods and procedures that may serve as a guide to other agencies wishing to replicate the program. We believe that the results of such a carefully detailed approach can offer significant suggestions not only to those concerned with the blind but to agencies dealing with other forms of severe handicap.

Finally, the question of economic feasibility may legitimately be raised. Why such an investment in those who may never contribute to society in any significant way? While this can be viewed in terms of eventual savings to the community as a result of avoidance of total dependency, the real answer may be within the area of values and the humanistic philosophy that outweighs purely materialistic considerations.

BIBLIOGRAPHY

1. Blindness - Some Facts and Figures, American Foundation for the Blind, New York City.
2. Moor, Pauline M., "Blind Children With Developmental Problems", Children, Vol. 8, No. 1, January - February, 1961.
3. Blank, H. Robert, "Psychological Problem Associated with Congenital Blindness", New Outlook for the Blind, V.53, 1959, pp. 237-244.
4. Cohen, Jerome, "The Effects of Blindness on Children's Development", Children, January - February, 1966.
5. Blank, H. Robert, "Psychoanalysis and Blindness", The Psychoanalytic Quarterly, Vol. XXVI, pp. 1-24, 1957.
6. Burlingham, Dorothy, "Some Notes on the Development of the Blind", Psychoanalytic Study of the Child. International Universities Press, 1961.
7. Imamura, Sodako, "Mother and Blind Child", American Foundation for the Blind, Monograph, New York, 1965.
8. Prugh, O. G., and Harlow, R. G., "Masked Deprivation", in Deprivation of Maternal Care, Monograph, World Health Organization, Geneva, 1962.
9. Wills, Doris M., "Some Observation on Blind Nursery School Children", in The Psychoanalytic Study of the Child, International Universities Press, New York, Vol. XX, 1965.
10. Wills, Doris M., Ibid.
11. Gruber, K. F. and Moor, P. M., (Ed.) "No Place to Go", A symposium, American Foundation for the Blind, New York, 1963.
12. Parmelee, A. H., "Developmental Studies of Blind Children", The New Outlook, June, 1966.
13. Elonen, A. S. and Polzien, M., "Experimental Program for Deviant Blind Children", The New Outlook, April, 1965.
14. Wills, Doris M., op. cit.
15. Burlingham, Dorothy, "Some Problems of Ego Development in Blind Children", in The Psychoanalytic Study of the Child, International Universities Press, New York, Vol. XX, 1965.
16. Nagera, H. and Colonna, Albie E., "Aspects of the Contribution of Sight to Ego and Drive Development", in The Psychoanalytic Study of the Child, International Universities Press, New York, Vol. XX, 1965.
17. Burlingham, Dorothy, "Hearing and Its Role in the Development of the Blind", The Psychoanalytic Study of the Child, International Universities Press, New York, Vol. XIX, 1964.

TEACHER TRAINING: WHENCE AND WHITHER BOUND?

By Georgie Lee Abel

The scope of this discussion will be limited for the most part to the development in the United States of college and university courses for teachers of the visually impaired: those programs available at both graduate and undergraduate level which now attract not only prospective teachers of the visually impaired, but also experienced teachers who return to institutions of higher learning for further study and research.

Nevertheless, it is important to recognize at the outset that the necessity for these courses was demonstrated by almost a century of trial and error in American education of the blind alone. This social phenomenon is described in a number of books and articles, such as Schwartz's "Samuel Gridley Howe," French's "From Homer to Helen Keller," Farrell's "Story of Blindness." It is also covered in detail in the Proceedings of the American Association of Instructors of the Blind, annual reports of schools for the blind and the Outlook for the Blind. From these we need only to draw and bring into focus those elements which have been catalytic agents in producing the training of teachers in colleges and universities.

An X-ray of the structure of organized work for blind in America brings out sharply the following mushroom growth of residential schools: |

STATE	DATE
New York Institution for the Blind	1832
Perkins School for the Blind in Massachusetts	1832
Pennsylvania, with pupils from Delaware, New Jersey, and Maryland	1833
New Jersey, special plans	1836
Virginia	1839
Tennessee	1843
Ohio	1845
South Carolina	1845
Indiana	1847
Illinois	1848
Mississippi	1848
Wisconsin	1849
Missouri	1850
Maryland	1853
Texas	1856

Concerning these institutions, Howe, their physician-progenitor, wrote as follows:

"I wish to make use of this opportunity for criticizing those institutions with a view to their improvement: and thus my purpose must be my apology for alluding to the part which I have had in their establishment and organization. I not only organized the first one in the United States, the main features of which have been widely copied, but labored with more zeal than knowledge to induce people to found others; and made direct efforts to the legislatures of a dozen states to appropriate money for their support. . .

"All great establishments in the nature of boarding schools, where the sexes must be separated; where there must be boarding in common and sleeping in congregate dormitories; where there must be routine and formality, and restraint, and repression of individuality; where the charms and refining influences of the true family relations cannot be had---all such institutions are unnatural, undesirable, and very liable to abuse. We should have as few of them as is possible and those few should be kept as small as possible.

"The human family is the unit of society. The family, as it was ordained by our Great Father, with its ties of kith and kin; with its tender associations of childhood and youth; with its ties of affection and sympathy; with its fireside, its table, and its domestic altar — there is the place for the early education of the child. His instruction may be had in school; his heart and character should be developed and molded at home."*

Much brooding on this view by Howe and others eventually led to the establishment of day school programs as shown in the following chart by Frampton:

LOCATION	DATE
Chicago, Illinois	September, 1900
Cincinnati, Ohio	September, 1905
Milwaukee, Wisconsin	November, 1907
Racine, Wisconsin	February, 1909
Cleveland, Ohio	April, 1909
Boston, Massachusetts	Spring, 1909
New York, New York	September, 1909
Newark, New Jersey	November, 1910

Meanwhile, viewing another part of the structure of work for the blind we find The American Association of Instructors of the Blind, which first met in 1853, and began to convene regularly in the 1870's, the American Printing House for the Blind, chartered in 1858, and the American Blind Peoples Higher Improvement Association, which first met in 1895 to become the American Association of Workers for the Blind in 1905.

*From "Batavia Address" - Blindness, 1965.

In 1907 the journal known as the Outlook for the Blind first appeared and for the insuing 12 years slowly moulded opinion of the field to establish a "clearing house". This brought into being the American Foundation for the Blind in 1921, with the joint sponsorship of the American Association of Instructors of the Blind and the American Association of Workers for the Blind.

Waxed and Waned For 80 Years

An organization which attempted to help schools assume responsibility for children who were partially seeing was the National Society for the Prevention of Blindness, established in 1908. This organization provided a journal entitled, "The Sight Saving Review", and it set up some standards for colleges and universities asked to develop programs for teachers.

Such was the relatively simple framework of work for the blind in and out of which concepts of teacher training waxed and waned for 80 years. During this time there was only one major formal attempt at teacher training, and this paradoxically was conducted outside the United States by Campbell's Royal Normal College in Britain, as described in BLINDNESS 1965 by Margaret Ryan. Nevertheless, it would not be correct to say that these decades were to make no contribution to teacher training when it finally was initiated. On a pragmatic basis the American Association of Instructors of the Blind had managed to evolve an educational formula which was by no means unsophisticated by 1918, as shown in the following goals by Thos. S. MacAloney as president of the Association:

1. The adoption of a Uniform Type for the blind of the English speaking world.
2. The gradual elimination of pupils of very low mentality from our schools.
3. The introduction of sight-saving classes for the partially blind in institutions for the blind and in public schools.
4. The regular and scientific training of our girls in homemaking.
5. The systematic physical training given our pupils in the gymnasium, the swimming pool and on the athletic field, the holding of competitive athletic meets which has done much to promote self-confidence and school pride.
6. The education of the blind with the seeing in high schools and universities, as well as in special classes for the blind in public schools.
7. The introduction of new courses of study which are more elastic and which give equal opportunity for the development of the bright as well as the dull child.
8. The establishment of separate kindergartens for the young blind.
9. Greater attention to vocational work, especially for those of lower mentality.

Heads of Schools Recognized Need

No mention was made of formal teacher training, it is true. Indeed many heads of schools at this time stuck to the formula, "I prefer to train my own teachers." However, the first courses were really offered and planned by the heads of schools recognizing their desperate need for teachers. It was the administrator of a school in a given community or state who approached a college or university near his school and asked that courses be established, and occasionally he was willing to house the courses and often suggested at the same time the faculty.

The foremost apostle of this concept was Dr. Edward E. Allen of the Perkins School, who had received his own teacher training in England under Campbell, and who developed an affiliation with Harvard University for a teacher training course supervised by Jessica Langworthy, whose teacher-pupils still pay her the tribute of nostalgia.

"Blindness and the Blind in the United States" (1934) best outlines early efforts to establish teacher-training in a college or university setting as follows:

"Of later years there have been special training courses of more systematized order conducted, for a longer or shorter period of time, under the college or department of education in certain of the larger institutions of learning in the United States. The first efforts were at the University of California in 1918. Sometimes there is cooperation or supervision by some school for the blind. At the courses provided at Harvard University in conjunction with Perkins Institution there have been students from various countries. Training may be afforded for teachers of both blind and semi-sighted children. Universities or colleges having had this work are University of California, University of Pennsylvania, Columbia University (Teachers College), Harvard University, University of Southern California, Western Reserve University, Catholic University, Fordham University, University of Cincinnati, George Peabody College for Teachers, New York University and certain State Normal Colleges. In a few institutions, summer sessions for the training of teachers have been provided."

When the American Foundation for the Blind came into being as a "clearing house" in 1921, one of the responsibilities which it assumed was publication of "The Outlook for the Blind", the journal which since 1907 had been published by a kind of confederation of persons interested in the blind who had somewhat guiltily imposed on the personal dedication and learning of its editor, Charles Campbell, to keep it in existence as a forum of progressive ideas in work for the blind. In addition to this publication the Foundation initiated a second journal, "The Teachers Forum." (Both are now combined in "The New Outlook for the Blind".)

These publications and a series of monographs exerted influence on education on pre-school services for blind children as well as school age blind children. Thus, the American Foundation for the Blind was a force in establishing the first scholarship programs and in providing funds to colleges and universities for establishing programs for the preparation of teachers.

Its interest in research prior to the time when government funds were available also provided a most valuable source of information for those desiring through its planned courses, workshops and conferences affecting both literature and research. It had a direct influence on one institution when it established and financed its first full-time position in a year-round program where there was need to exert a strong regional influence in education of the visually handicapped. Full-time positions until this time were rare in year-round programs.

Dr. Lowenfeld, Miss Gruber Rate Praise

In the 40s and 50s, Dr. Berthold Lowenfeld, then Director of Educational Research, stimulated research and taught in various colleges and universities particularly during the summer sessions, making many contributions to the literature of interest to teachers.

Miss Kathern F. Gruber, as Assistant Director in charge of professional services, exerted great influence in education, in her administration of workshops and conferences and in her work to cooperate with other governmental agencies having far-reaching influence on education. She stimulated the scholarship program, the establishment of standards of great importance to education, and made her consultative staff readily available to schools, departments of education, colleges and universities, and various areas of service throughout health, education and welfare in the United States. Without her energy and convictions many of the projects could have not been achieved during this dynamic period in education. This work assumes great significance when it is realized that this period was prior to the federal support for programs in education which are available today.

Many of the leaders who make contributions under the current support in colleges and universities acquired much of their skill and experience in some way through association with the Foundation during this period.

There were other organizations both private and governmental with varying degrees of interest and influence and there were those with broad interest in all children who, on occasion, made contributions: such groups as the Council for Exceptional Children, the general journals from American childhood education, and various organs from both elementary and secondary education.

It seems important, however, to realize the dichotomy that existed in relation to the groups with specific interest in order to appreciate the move toward a more profound understanding of children to be served by teachers receiving their preparation in the more recent and enlarged centers. Until the visually impaired child could be seen in relation to his type of visual problem and hence his varying needs for educational services, it was not possible to conceive of an education for him.

The journals for all of the specialized organizations exerted a strong influence on the colleges and universities where many questions were raised with respect to the types of teachers needed and the curriculum which might be suitable as well as the probable demand for teachers once the institution had developed a professional program. "The Sight Saving Review," from the National Society for the Prevention of Blindness, published largely medically

oriented articles, but made available statements with respect to standards for the schools to consider and published an occasional article dealing specifically with the educational aspects of programs for teachers of the partially seeing.

Many Articles Aided Teachers

"The International Journal for the Education of the Blind" was quite specific in its title, and at first published more short articles of a practical nature for teachers, using the term "blind" in most of its references to the children served. As time passed, however, it showed greater inclination to include all visually impaired children as it issued articles of a philosophic nature and as it became a vehicle for research reports.

"The New Outlook for the Blind" (a reformed "Outlook") from its beginning published articles of interest to all educators of the blind. While it had a broad interest in all aspects of work for the blind, it offered many articles for the benefit of teachers. In addition, the American Foundation for the Blind published some monographs specifically directed to those who served children both as pre-school workers and as teachers of the blind. Outstanding examples of these types of publications are "The National Work Session on the Pre-School Blind Child" (1952), "The Pine Brook Report" (1954), and "The Itinerant Teacher Service for Blind Children" (1957). Such conference reports as these represented the thinking and experience of many of the outstanding people in education in the United States.

As a result of the increase in quantity and quality of publications issued by the specialized organizations there was more involvement in cooperative projects between the organizations mentioned and such agencies as The American Printing House for the Blind, the Library of Congress and the Vocational Rehabilitation Administration. Conferences for the preparation of educational materials were called and jointly financed by the American Printing House for the Blind and the American Foundation for the Blind with such groups as the National Braille Association and the National Aid to the Visually Handicapped joining the larger group.

There also were significant joint efforts made by the Foundation in cooperation with Vocational Rehabilitation Administration. The publication of standards set up at a meeting for mobility instructors of the blind was not only the first contribution of its type but also it made possible refinements necessary before colleges and universities were able to set up professional courses in this new area.

Valuable proceedings resulting from other such conferences provided literature dealing with teachers of the deaf-blind and industrial arts for the blind. All of these cooperative efforts helped those who participated to crystallize their thinking and consider new problems for further study. They also provided references for teachers and stimulation for researchers.

Foundation Provided Faculty Members

The American Foundation for the Blind financed the total operation of many specialized programs during summer sessions at various institutions

either by providing faculty members to teach the courses or by making available funds for the employment of faculty. Some of the institutions mentioned in an earlier quotation by Best were still offering courses and there were important additions to be discussed later.

The most important contributions from the specialized agencies and organizations seem to be found in the patterns they set and the interpretation they provided for further, more intensive contributions from larger groups as the Council for Exceptional Children, the Children's Bureau, the Department of Exceptional Children and Youth of the U. S. Office of Education.

In the 30s and 40s there were continued offerings of courses in some of the institutions previously mentioned largely in the form of summer sessions established for the convenience of teachers. There were also different types of courses which were broader in scope designed to include home teachers of the blind and other types of workers with the adult blind. The content was particularly from psychology, education, social services and medically oriented areas. These were made possible through private contributions from organizations like the American Foundation for the Blind and the National Society for the Prevention of Blindness. Such courses were taught occasionally by faculty members loaned by these organizations to the college or university. Examples which might be mentioned are those conducted in Cleveland at Western Reserve University and at Ann Arbor and Ypsilanti, Michigan, where there was cooperation between Michigan State Normal College and the University of Michigan, with faculty from Wayne State University at Detroit.

Some of the courses were of interest to all who work with the visually impaired. For example the various types of lay courses dealing with structure and function of the eye or visual impairment have continued to the present time. Courses which dealt with psychological and sociological topics relative to attitudes toward blindness were offered somewhat later. They appear in catalogs today under various titles with much the same meaning as the previous courses. The National Society for the Prevention of Blindness offered courses in all parts of the United States and the then territory of Hawaii. Many catalogs today show courses under the same titles as the earlier ones.

Children's Ailment Emphasized Need

The summer session courses permitted the various colleges and universities to become involved without too much risk financially. They could have a larger enrollment guaranteed than was possible during the year-round operation. They were greatly aided by funds which were provided by previously-mentioned private organizations.

The leadership in education from the American Foundation through Miss Gruber exerted greater influence on a number of leading institutions than any exerted previously. The need was keenly felt because of the large number of children in new programs in the schools affected by retrolental fibroplasia, at that time responsible for 50 percent of blindness in children. Summer sessions established programs which were funded by the Foundation in part and faculty members were loaned either to direct or participate in courses designed to provide basic specialized preparation for teachers and, in some cases, institutes and workshops dealing with specific topics requested were offered.

Among the institutions participating in the programs which have continued to develop to date are the following: George Peabody College for Teachers, the University of Texas, Syracuse University, the University of Minnesota, the University of Cincinnati and San Francisco State College. The American Foundation for the Blind also started the publication of lists of programs in all parts of the country for the convenience of teachers seeking information about possible training. There were summer session scholarships to assist the teacher further. All of the aforementioned programs, with but one exception, have developed year-round programs and have full-time faculty.

Year-round courses were slow in developing largely due to costs and to the fact that there were so few students who could attend classes during the regular academic year.

Perkins School for the Blind—the original pioneer of teacher training—continued its year-round operation all through this period and is still continuing its program. It offers scholarships to students in the United States as well as foreign students from all parts of the world. In addition to its program for the preparation of teachers of the blind it is one of the few schools which has made a valuable contribution for years in training teachers of the deaf-blind. It has functioned in cooperation with institutions of higher learning: Harvard University, Boston University and more recently with Boston College. The scholarships are made available to teachers who reside at the school as a part of their preparation.

Followed Plan Started at Perkins

Another year-round operation which has continued through the period of involvement on the part of the colleges and universities is that of the New York Institute for the Education of the Blind. This follows the plan originated at Perkins. Students work at the school for the blind and receive part of their course work there while doing some of their work at the institution from which they receive credit. The Institute has transferred its original relationship with Teachers College to Hunter College in New York. It also has continued to offer a program for training teachers of the deaf-blind.

A final example of a school for the blind taking the initiative and providing much of the financial support in an area related to teacher education is the Overbrook School for the Blind with its program of "Courses for Workers with the Adult Blind". This program was organized in close relationship with agencies and social work schools in the area around Philadelphia. Overbrook provided many services to its students who often received scholarships through the schools. Some of the same courses offered by this plan have been accepted by the State Department of Education for teachers seeking certification to teach. Their focus, however, was on the adult blind. The University of Pennsylvania has cooperated closely with this program, but Overbrook maintained the leadership.

Little or No Scholarship Aid

Perhaps the best example of total commitment on the part of a college or university for financing and developing its own year-round program can be

found in the establishment of a program in the area of the Visually Handicapped at San Francisco State College. A Department of Special Education was started in 1948 with a full-time faculty position in each of the major areas in special education. Students were enrolled in the program with little or no scholarship aid. Later they received some of the first year-round grants which were contributed to the college and administered by the college. These were earmarked grants offered through the California Congress of Parents and Teachers to help secure teachers of handicapped children for their rapidly growing schools.

Later the American Foundation for the Blind, the National Society for the Prevention of Blindness and the American Association of Instructors of the Blind contributed summer session scholarships in varying amounts. Shortly after the credential program for the State of California was established, a masters degree level program was inaugurated where a student could major in the area of the visually handicapped and minor in distributed areas according to their educational needs. The first professor in charge of the program, Mrs. Florence G. Henderson, provided excellent leadership in helping communities find teachers and in providing supervision for the early programs in the local schools. The rapidly growing programs in the districts and the availability of the California School for the Blind provided a rich variety of opportunities for directed student teachers.

Students who desire more information concerning college and university level involvement in teacher education will find the article dealing with "Professional Education for Teachers of the Visually Handicapped", in the International Journal for the Education of the Blind, Vol. XI, No. 4, gives them a picture of some developmental history up to 1962. There is, in the same issue of the journal, an article by William T. Heisler dealing with "Teacher Training Within a Residential School Program." This gives a good example of the earlier pattern established whereby the residential school assumes the greater share of responsibility.

The period under discussion is characterized by great growth in courses offered in the colleges and universities and little coordination among those responsible for their development and continuation. The impetus depended on finding someone either on or off the campus to come in and teach the required courses for teachers in order that they might be certified by their states. Teachers would go to various states. Their transcripts might have revealed courses at four or five different institutions where they might have studied either one week or in a full summer session.

Teachers Given Chance To Travel

Out of an almost frantic search for specialized preparation, opportunities arose for teachers to meet each other, to travel to different parts of the country and observe the characteristic differences in practices in education.

The year-round programs were often taught by part-time faculty members who had left their classrooms to teach late afternoon and evening courses. Full-time faculty members were rare, and in certain of the programs there were few opportunities to observe or to work with visually impaired children.

During this period there were studies and conferences supported largely by private funds. Later they received partial or total government support from

various divisions of the Department of Health, Education, and Welfare, which considered important topics and explored questions concerning the future of the small programs for the visually handicapped and the need for educational leaders to study at the graduate level. This led to consideration of standards for large centers at appropriate colleges and universities which could provide all the components of a well-rounded program with all the necessary facilities.

There was growing recognition of the need for much more financial support than had been possible prior to this time. Most of the universities and colleges felt unable to finance programs for the small number of students and at the same time provide the variety of laboratory experiences needed for this complicated sequence of educational courses. There was growth and with it came increased responsibility and frustration because of the lack of leadership, particularly in the availability of professors to teach in the institutions and administrative leaders to cooperate in schools and state departments in the vital laboratory and research experiences.

As colleges and universities became more involved in a profession responsible for setting up a curriculum for teachers of the visually impaired, they became sufficiently interested to undertake some studies of their work. There were many new people employed in these programs for the first time and there were others like those mentioned earlier who had offered courses for a number of years. They were called together for meetings where they shared experiences and problems with each other.

As early as 1952 there was a panel of representatives from various institutions offering courses in the areas of the visually handicapped who discussed the offerings and the descriptions of their programs. On this occasion the following programs were presented: Teachers College, Columbia University; Perkins Institution; courses which had been sponsored by the American Foundation for the Blind in institutions which offered separate facilities for white and Negro teachers; Hunter College; McMurray College; Willamette University; San Francisco State College; the Michigan School for the Blind; and Catholic University. The collection of short papers was published by the American Foundation for the Blind as "Training Facilities for Preparation of Teachers of Blind Children", February, 1953.

Only Two Had Full-Time Person

Of the nine types of programs discussed, five were closely affiliated with a residential school from which much of the support was provided in addition to the laboratory experiences at the schools. These were located at Perkins in Massachusetts, at Hunter College in New York, at McMurray College in Illinois, at East Lansing in Michigan and at Willamette in Salem, Oregon.

Only two of the schools from the list had a full-time person responsible for the course work and educational experiences of the student teachers without additional assignments in other fields. These were Perkins School for the Blind, affiliated with Boston University at that time, and San Francisco State College, affiliated with the California School for the Blind. In the former case the full-time person was on the campus of the school for the blind, and in the latter, the faculty member was employed by the college and housed on the college campus where both local schools and the California School for the Blind

cooperated in directed student teaching phases of the program. The other schools largely offered only summer session programs.

While the 1953 publication resulting from this meeting cannot really be called a study, it does represent the first effort to bring together people in teacher preparation as applied to the area of the visually impaired. It will be noted that at this time there were many more programs still discussing only the education of the blind. It took more than 10 years to achieve programs in larger numbers where teachers could be prepared in the broader areas including both the blind and the partially seeing.

The American Foundation for the Blind brought together an advisory committee on teacher education which was helpful in planning and developing some work sessions for people from colleges and universities, local schools, residential schools, state departments of education, related agencies of a number of disciplines outside the field of education. These representatives also included teachers and administrative and consultative personnel. There was an attempt to study the teachers' reactions to the specialized preparation they had received, and there were, through evaluation of the brief study and the deliberations of the groups, some suggested guidelines which could be made available to those who requested them. These dealt with basic curriculum necessary because of the specialized needs of the visually impaired children and youth. Such areas as mobility skills, braille reading and writing, and visual efficiency, among other topics, were discussed. The results of three national meetings were made available at that time from the American Foundation for the Blind in mimeographed form, dated 1960.

The largest study supported by private funds was one dealing with "Qualification and Preparation of Teachers of Exceptional Children." This concentrated on the competencies needed by personnel in special education, and included large groups of professional people from all areas of education of exceptional children. Support came largely from the Association for Crippled Children and Adults and the U. S. Office of Education. Like many of our studies, the bringing together of most of the key people in the United States gave great impetus to the movement providing more support for all exceptional children. The studies of special interest to the readers of this paper are the two U. S. Office of Education reports by Mackie and Dunn, "Teachers of Children Who Are Partially Seeing," Bulletin 1956, No. 4, and "Teachers of Children Who Are Blind," Bulletin 1955, No. 10. Also the readers will find the larger report from the same study by Mackie, Dunn and Cain interesting because of its presentation as an overview. It is entitled "Professional Preparation for Teachers of Exceptional Children."

These were consensus studies and have the limitation of such studies. At the time they were conducted, however, they produced a base for information concerning criteria relative to preparation and experience. They undoubtedly made possible further, more definitive studies with people motivated to do research and to develop standards which would insure better practices and goals in all programs.

Reports Presented in Two Parts

A more recent example of combined efforts is found in the national conferences held first in Washington, D. C. and later in various parts of the

United States in which there was involvement of people from local, state and national professional levels who could speak for just about every type of school or agency. The proceedings of the first meeting, entitled "Professional Standards Conference", resulting from the meeting at the Park Sheraton Hotel, May, 1965, were made available to those at regional sessions. The reports were presented in two parts: one dealt with general issues of concern to all; and the second included twelve different areas, several of which dealt with areas of exceptionality and others with administration and supervision, advanced graduate study, continuing education and ethical standards. The opportunities for upgrading standards here are unlimited if accepted and implemented.

More familiar today is the initiation of the Commission on Standards and Accreditation of Services for the Blind, referred to as COMSTAC. It is too early to predict what effect this organization will have on educational programs where blind children are enrolled or in institutions of higher learning where standards already exist. Those providing educational or rehabilitation services of any type will find the recent publication of this organization interesting.

The late 50s and early 60s were characterized by studies of professional education of teachers serving all children. All such studies are vital to the welfare of teachers of the visually impaired and certainly the procedures and standards affect the college and university faculty members serving in our specialized area. For example, the studies undertaken by the U. S. Office of Education, previously mentioned, and those current ones sponsored by the Council for Exceptional Children have direct relationship to the higher education programs whether they are concerned with the visually impaired or other areas of exceptionality.

Through the National Education Association, the National Commission on Teacher Education and Professional Standards, valuable work in curriculum certification and other important areas has made a vital contribution to those institutions preparing teachers of all children. The next few years will surely see greater implementation of the Professional Standards conferences held in various sections of the country with responsibility for development and implementation of standards in all specialized areas of education of exceptional children. It will be interesting for students in this area to follow the developments of this broader group which seems to be less hindered by sharp categories of specialization than some of the earlier groups had set forth. Movements of this type should be of great value as teachers in the specialized areas gain greater depth in their understanding of the needs of all handicapped children. They will certainly find their course work and directed experiences in the colleges and universities more helpful as they reflect both breadth and depth in their pre-service experiences. The teacher should then become more effective with children with multiple handicaps.

Government Support of a Growing Profession

Finally, many forces conspired to produce the recent legislation which has provided government support for both colleges and universities and also state and local departments of education. The deciding force, however, came from those specializing in the area of the visually impaired, strengthened by active support of the Council for Exceptional Children. These at last arrived at a time when they could present a unified approach in behalf of all handicapped children, resulting in legislation.

The need for funds was expressed by leaders from professional organizations who were fortunate enough to secure the interest of congressmen and state legislators. The leaders came largely from the groups representing the blind, speech handicapped, the mentally retarded and the orthopedically handicapped.

The people in the area of education of exceptional children with their close relationship to the organizations, worked hard to secure legislation. They found important congressmen—too numerous to name—very real friends who had both sympathy and understanding of the problem. At the apex of power, the late President John F. Kennedy, who, while interested in all types of people in need of service, had a keen personal interest in the mentally handicapped. His efforts in this area stimulated not only legislation but vital research. Public Law 85-926 was passed in April, 1960, to cover children who were mentally retarded. Shortly after this legislation, the educators of the deaf secured a separate bill to train teachers in their area. Finally it was recognized that all of the legislation concerning the handicapped should be covered under the same legislative act. Hence, the "umbrella" approach including all exceptionalities was achieved through Public Law 85-926 as amended, September, 1964. Fortunately for professional education, colleges and universities were able to participate actively in drafting this legislation. Thereby, in addition to the traineeship-fellowship program for students, much needed support funds were made available to institutions. Leaders from all types of institutions, local schools, and agencies worked with the representatives from the U. S. Office of Education to set up criteria and to evaluate proposals.

Of equal importance to the fellowship and traineeship program was the research and demonstration program in education. Colleges and universities, state departments of education and schools could share in this new opportunity. Yet a dream realized at last brought the reality of challenges and responsibilities.

The most frequently stated reason for inadequate services for handicapped children in the schools and communities was lack of funds. However, it had been demonstrated that when some localities were able to find ways to finance programs and budget these costs, despite the growing population of children in their schools, those who found the money were then faced with the problems of finding qualified teachers and administrators for the schools. Moreover, the colleges and universities in turn had been unable to assist the struggling new programs because they needed faculty to train the teachers and administrators.

In meeting this need, programs for injured veterans with all the resources they commanded in money and attention were to play a part. Rehabilitation service became available through a pattern of functioning from the national level through the regional offices to the states.

Distinguished Service by VRA

Later the organization, now known as the Vocational Rehabilitation Administration, performed a distinguished service converting this experience to programs for all types of handicapped persons.

Of particular interest in this discussion, has been VRA work in setting up programs in colleges and universities in all parts of the country by financing

the training of rehabilitation counselors. These counselors, moving from the institutions to their agencies, worked in the various local communities with school administrators and teachers concerned with young handicapped people in the schools. The Vocational Rehabilitation Administration also contributed directly to education through its program of research and demonstration grants as well as its planning and training grants. The VRA added patterns valuable to educators in calling conferences involving social service and medical personnel. By-products of these experiences eased the efforts of educators who later became involved in government-supported programs through the U.S. Office of Education. Many of the conferences and conventions where information was shared between educators and rehabilitation personnel made possible greater understanding of the rehabilitation process in relation to education and no doubt had much to do with the more flexible concept of the age level at which rehabilitation service could be provided.

In many institutions, rehabilitation programs and the special education departments functioned in the same schools of education or psychology if not in the same department. They were also closely related to general counseling as it functions in the schools. On campuses where there were schools of social work and medicine, there was the first real opportunity for an interdisciplinary approach to become an actual practice in the clinics where handicapped persons were served.

With respect to the visually handicapped, the greatest contribution of rehabilitation, prior to the legislation which made possible more government support for educational programs in the colleges and universities, was the establishment of orientation and mobility instruction programs. Apprenticeship programs in some states helped vocational training of the potential worker who was handicapped. Research and demonstration grants affecting orientation and mobility instruction for blind children of school age brought much valuable information to those who administer programs as well as those who provide education for teachers. Work with children was really pioneered through these research and demonstration projects. The Vocational Rehabilitation Administration supported two graduate programs for the training of personnel who would serve as mobility instructors of the visually impaired. The first program was at Boston College and the second was established at Western Michigan University. A third program has been activated at California State College at Los Angeles.

Currently through the administration of Public Law 85-926 it has been possible to establish one graduate level and one undergraduate level program through the U. S. Office of Education, as well as some summer institutes dealing with various aspects of orientation and mobility skills. The graduate program at San Francisco State College is described in the March issue of the *International Journal for the Education of the Blind*, 1967. These new programs in education have profited from the contributions of the earlier institutions funded by the Vocational Rehabilitation Administration.

For the purposes of this discussion readers should find it interesting to note the growth in new year-round programs. From the time of the report on teacher education, referred to earlier, with less than ten programs reported, we can note the extreme growth reflected in the following information made available through the U. S. Office of Education for the award period beginning September 1, 1966:

State	No. of Programs
Arizona	1
California	3
Colorado	1
Florida	1
Illinois	2
Massachusetts	1
Michigan	3
Minnesota	1
New Jersey	1
New York	2
Ohio	1
Oregon	1
Pennsylvania	1
Tennessee	1
Texas	1

An interesting comparison of the programs offered the first year, 1962, and those for 1966 was presented later in the year of 1966, showing a total of 25 programs.

The table on page 120 is submitted as received from the U.S. Office of Education. The breakdown in types of groups is significant. Note the emphasis on "both blind and partially seeing" in relation to the discussions of the broader concepts of the visually impaired.

This report includes program development grants, summer traineeships, year-round traineeships, year-round masters level fellowships, and doctoral level fellowships, called post-master grants. It also includes those institutions offering under-graduate level preparation. Nine of these institutions were known to be offering or contemplating a doctoral level program at the time of the report. Since names of programs were used in the discussions dealing with the early institutions it seems appropriate to mention the names of the new year-round programs with full-time faculty. These were strengthened and/or developed at a time of greater private and public support. They are as follows:

The University of Arizona, Tucson, Arizona
 California State College, Los Angeles, California
 University of Southern California, Los Angeles, California
 Colorado State College, Greeley, Colorado
 Florida State University, Tallahassee, Florida
 Michigan State University, East Lansing, Michigan
 University of Minnesota, Minneapolis, Minnesota
 Portland State College, Portland, Oregon
 University of Pittsburgh, Pittsburgh, Pennsylvania
 Teachers College, Columbia University, New York, New York
 The University of Texas, Austin, Texas

Under the able leadership of John Walker Jones, the early government, college and university relationships in the area of the visually handicapped were most constructive. Reports were made available and directions were given which were most helpful to all who participated. He made some valuable

COLLEGE AND UNIVERSITY PROGRAMS FOR THE PREPARATION OF EDUCATORS
OF VISUALLY HANDICAPPED CHILDREN 1962 AND 1966 COMPARED

Number of Institutions With:

Year	Total No. of Diff. Inst's.	No. of Diff. States	Graduate Programs	Under- Graduate Programs	Academic Year Prog.	Summer Programs	Programs for Teachers of		
							Blind Only	P.S. Only	Both Blind & P.S.
1962	15	11	15	9	13	7	5	1	9
1966	25	17	24	19	25	19	0	0	25

reports concerning curriculum, showing those schools which offered braille and mobility courses, and planned other reports. These periodic summaries of offerings should provide a beginning for more information which should help all the institutions understand the programs outside their own schools.

Legislation Offers More Possibilities

During the first three years of the participation, the U. S. Office of Education called a meeting of those in college and university programs to explore problems in orientation and mobility. It is to be hoped that more such opportunities will be available in the future.

Space does not permit a discussion of other important legislation which has made available various types of services highly related to the more specific legislation sponsoring the aforementioned fellowship and traineeship programs. The NDEA legislation has helped in many ways. The institutes accompanied by scholarships, the equipment and consultative service to colleges and universities have been of great value to school districts as well as teacher education facilities. The "great society" legislation has offered additional possibilities which may not have been fully explored for their value to exceptional children. Among the areas covered through title XI, the assistance to school libraries and educational media have special significance to the education of the visually impaired.

Through the development of the institutes sponsored by both State Departments of Education and the Colleges and Universities, there was greater use of faculty members working with the local and state administrators. There were opportunities for consultative service and refining the work of the college or university representative in this important skill. The usual opportunities to know at first hand the problems at the local and state levels strengthened the contributions of the faculty on their own college or university campuses. There also was the chance to share problems and goals in an atmosphere of a productive professional environment. Prior to these opportunities the budgets in colleges and universities were meager and state departments often had their budgets curtailed. The state and regional institutes have broadened the experiences for educators at all levels.

The greater support for professional programs has lifted the level and type of offerings considered to be a minimum sequence in the preparation of teachers in this area. In general, all the conference reports and studies which have occurred from the earlier period to the present seem to agree with respect to certain essentials in a specialized curriculum for teachers of the visually impaired. Such a sequence of courses as the following are suggested for those who plan to teach in this area:

1. Study of visual impairment (to include structure and function of the eye with the accompanying educational planning in relation to the visual problem where implications exist. Also, working with other members of a team utilizing the information available and planning for programs which make full use of residual vision for those considered to have varying degrees and types of problems.)

2. Methods and procedures in working with all types of visually impaired children, including those with complete loss of sight. (This appears in all lists of courses.) These procedures are accompanied by observation of children under instruction in schools where they are working with all types of appropriate equipment and materials.
3. Directed student teaching with children having normal vision and children with all types of visual problems, as well as those having marked additional handicaps, should be required of all student teachers. These directed experiences should be conducted in all types of schools: schools for the blind, schools for mentally handicapped, schools for orthopedically handicapped as well as those more recently designed for emotionally handicapped and neurological problems. More recently it has been possible to add agencies and departments offering preschool services for visually impaired children.
4. Specialized techniques and appliances used by those who are blind or severely visually limited, such as the braille codes, mobility skills (offered more in recent years), visual and audio aids of all types and production of educational materials appropriate for this area must be well learned by teachers.
5. Psychological, sociological implications of visual loss and the related educational and rehabilitation services for use in constructive vocational guidance toward a future in the world of work. (Study in these areas is of prime importance. Such study is offered sometimes in separate courses but most frequently as units in a number of survey type courses.)

A review of the various college and university catalogs will show that there are all types of organizations of these broad areas in courses described under a variety of titles. It should be obvious to those who contemplate a full sequence of courses covering these areas of competence in various degrees of depth that some of them are more difficult to secure in the skills of the faculty and some of them are much more expensive to offer than others. Certainly there needs to be at least one faculty member with a high degree of competency in the braille system and how it works for the blind children and youth in various areas of their subject matter. The teaching of orientation and mobility skills is another in which there is a high degree of specialization in terms of competency as well as the directed experiences with blind children and youth. The course work dealing with visual impairment and the educational implications usually will be taught by more than one person in order to develop the scope and the potential use of the medical information by teachers.

Perhaps the most difficult area and yet the most important to the prospective teachers is the directed student teaching program with visually impaired children. The college or university is dependent upon the closest cooperation with the local and the specialized schools. The program can be limited or enhanced in direct relation to the qualifications of the master teachers cooperating directly in the program. There also is the importance of the faculty

supervisor who must work closely with the cooperating schools in the vital aspects of the program. Both continued evaluation and planning are required to maintain a positive relationship in an on-going program which the student teachers consider the most important phase of their total preparation.

The Future of the Specialized Area in Professional Education

Rapid growth in a relatively short period of time in the life of a profession serving human beings presents a real feeling of accomplishment and also poses some serious problems. There are those who feel that a profession in education has only now come of age and moved into a position to assume a great leadership role. Teachers of children and professional educators have broadened their scope of responsibility in the institutions in which they function and have also increased their services in state and national groups as well as in the larger community of the world.

Some regions of the country seem to be able to find more dynamic leadership and sufficient financial support to make greater progress than others. It is now possible to observe large centers where a teacher of the visually impaired may have access to experiences with all types of handicapped children and to observe an amazing variety of community resources. Yet, in other places, it is still possible to find two or three courses offered purely for the purpose of securing certification for teachers in the area of the visually impaired.

Today the national forces at work to improve service to handicapped children through greater knowledge and productive experiences seem to be stronger than in any period of our history. There is the added strength available through financial support at all levels. Nevertheless, as the population of children grows and the accompanying need for qualified educators continues to increase, an even greater burden will be placed on our society for this important educational service.

The citizens today are just beginning to observe the costs of our "great society" programs. It is crucial that those who plan professional programs be increasingly aware of their obligation to interpret to the citizens at all levels the goals and the justification of necessary expense. New and more effective ways must be found to accomplish this task. The constructive combination of both public and private funds will need to be much more creatively planned than has been possible in the past. There is no question that there is a commitment on the part of the profession at present, but there is a continuing challenge to help others understand the commitment and the responsibility required.

BIBLIOGRAPHY

- Abel, Georgie Lee, "Orientation and Mobility Program at San Francisco State College", *The International Journal for the Education of the Blind, Inc.*, March, 1957.
- Abel, Georgie Lee, "Professional Education for Teachers of the Visually Handicapped in a Teacher Education Center", *The International Journal for the Education of the Blind, Inc.*, Volume XI, No. 1, October, 1961, pp. 105-112.
- Best, Harry, "Blindness and the Blind in the United States," The MacMillan Company, New York, 1934.
- Farrell, Gabriel, "The Story of Blindness," Harvard University Press, Cambridge: 1951.
- Frampton, Merle E., "The Residential School", The New York Institute for the Blind, 1953.
- Hathaway, Winifred, "Education and Health of the Partially Seeing Child," Fourth Edition, New York: National Society for the Prevention of Blindness, Inc., Columbia University Press, 1959.
- Heisler, William T., "Teacher Training Within a Residential School Program", *The International Journal for the Education of the Blind, Inc.*, Volume XI, No. 1, October, 1961, pp. 112-116.
- Koestler, Frances A. (ed.), *The COMSTAC Report: Standards for Strengthened Services*, National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, New York: 1966.
- Lord, Francis E., "The Doctorate in Special Education", Department of Education, California State College at Los Angeles, Los Angeles, California.
- Mackie, Romaine P., and Edith Cohoe, "Teachers of Children Who Are Partially Seeing," U. S. Department of Health, Education, and Welfare, Bulletin 1956, No. 4.
- Mackie, Romaine P., and Lloyd M. Dunn, "Teachers of Children Who Are Blind," U. S. Department of Health, Education, and Welfare, Bulletin 1955, No. 10.
- N.D.E.A. Title XI, Institutes for Advanced Study: "A Manual for the Preparation of Proposals," U. S. Department of Health, Education, and Welfare, Washington: 1965.
- N.D.E.A. Title XI, Institutes for Advanced Study: "A Manual for the Preparation of Proposals," U. S. Department of Health, Education, and Welfare, Washington: 1966.
- Professional Standards Conference, The Council for Exceptional Children, Washington, D. C.: 1965.
- The Education of Teachers: Certification, Official Report of the San Diego Conference, National Commission on Teacher Education and Professional Standards, National Education Association of the United States, Washington, D. C.: 1961.

Training Facilities for the Preparation of Teachers of Blind Children in the United States, American Foundation for the Blind Publications, Education Series, No. 4, February, 1953.

Work Session Reports: American Foundation for the Blind: "The National Work Session on the Pre-School Blind Child", 1952; "The Pine Brook Report", 1954; "The Itinerant Teacher Service for Blind Children", 1957; "Workshop for Teachers of Deaf-Blind Children", 1955.

U.S. GOVERNMENT SPONSORED RESEARCH TO STUDY BLINDNESS - 1967 SUPPLEMENT

By Mary E. Switzer and C. Warren Bledsoe

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH
GRANT AND DEMONSTRATION PROJECTS
Listed by Grant Number, Grantee, Project Director and Purpose

GRANT NO.	PROJECT IDENTIFICATION	GRANTEE AND PROJECT DIRECTOR	PURPOSE AND INTEREST CATEGORY*
1771	Mobility Instruction for Blind Students in Residential School.	Illinois Braille and Sight Saving School 658 East State Street Jacksonville, Ill. 62650 Jack R. Hartong.	To provide orientation and mobility instruction and sequential field services for blind students in a residential school to show effect of such instruction on daily living activities of the students. (II-D).
1846	Establishing An Optical Aids Clinic.	Oregon Commission for the Blind 535 S.E. 12th Avenue Portland, Oregon 97214 K. Nolen Tanner, M.D.	To extend services of an optical aids clinics to the legally blind and visually handicapped of Oregon, Idaho, and Washington. (II-C).
2026	Establishment of An Optical Aids Clinic.	University of Tennessee, College of Medicine 62 South Dunlay Memphis, Tennessee 38103 Roger L. Hiatt, M.D.	Optical Aids Clinic. (II-C).
2029	Preparation of Blind Students for Vocational Rehabilitation Services.	Florida Council for the Blind 108 West Pensacola Tallahassee, Florida 32301	Mobility Project. (II-D).
2049	Proficiency of Assessment of Tape Duplicator Technicians.	Virginia Commission for Visually Handicapped 3003 Parkwood Avenue Richmond, Virginia 23221 Wm. T. Coppage.	To ascertain the feasibility of training and employing blind persons to be tape duplicator technicians for Talking Books and to identify other areas of tape distribution which can be handled by blind operators. (I).

*Code of Interest Category: I, Vocational; II-A, Prevocational-Centers; II-B, Prevocational Processes; II-C, Prevocational-Processes-Optical Aids; II-D, Prevocational Processes-Mobility Demonstrations; II-E, Prevocational-Processes-Testing; III, Equipment; IV, Personnel.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH
GRANT AND DEMONSTRATION PROJECTS (Continued)

GRANT NO.	PROJECT IDENTIFICATION	GRANTEE AND PROJECT DIRECTOR	PURPOSE AND INTEREST CATEGORY*
2065	Mobility Training for Mentally Retarded Blind.	Boston College Chestnut Hill, Massachusetts 02167 John R. Eichorn.	To determine the most successful methods of teaching orientation and mobility to mentally retarded blind individuals living in a residential institution. (II-D).
2174	Postural Determinants and Mobility Rehabilitation in the Blind.	Department of Children and Family Services 404 New State Office Building Springfield, Illinois 62706 Douglas E. Inkster	To investigate determinants in postural divergencies in the blind; study correlation between malposture and mobility problems; develop techniques for diagnosis and treatment of these problems. (II-B).
2185	Experimental Exhibit for the Blind.	Smithsonian Institution Washington, D. C. 20560 Charles Blitzer.	To produce an experimental museum exhibit for the blind. (II-B).
2287	Design of Tactual Illustrations for the Blind.	University of Maryland College Park, Maryland 20742 Joseph W. Wiedel.	A pilot study to test the feasibility of developing a set of tactual symbols and improve the design for illustrations used in Braille mobility and thematic maps. (III).
2318	Translation of Print to Tactual Materials.	Research Laboratories for the Engineering Sciences University of Virginia Charlottesville, Virginia 29903 J. W. Moore, Ph.D. and E. S. McVey, Ph.D.	A pilot project to construct and test the engineering feasibility of working models of a rapid print reader for the blind. (III).
2405	Employment of Multiple Handicapped Blind Persons.	National Industries for the Blind 50 West 44th Street New York, N.Y. 10036 R. C. Goodpasture.	A pilot project to determine the need for employment in sheltered workshops for the blind by multiple-handicapped blind persons and to investigate the possibility of securing contracts which would

*Code of Interest Category: I, Vocational; II-A, Prevocational-Centers; II-B, Prevocational Processes; II-C, Prevocational-Processes-Optical Aids; II-D, Prevocational Processes-Mobility Demonstrations; II-E, Prevocational-Processes-Testing; III, Equipment; IV, Personnel.

VOCATIONAL REHABILITATION ADMINISTRATION RESEARCH
GRANT AND DEMONSTRATION PROJECTS (Continued)

GRANT NO.	PROJECT IDENTIFICATION	GRANTEE AND PROJECT DIRECTOR	PURPOSE AND INTEREST CATEGORY*
2405	(Continued)	R. C. Goodpasture (Continued)	meet the needs and capabilities of these persons. (1).
2469	Gallery for the Blind, Museum of Art.	North Carolina Museum of Art Raleigh, North Carolina 27602 Charles W. Stanford, Jr.	A pilot project to develop a comprehensive plan for making the facilities of the N. C. Museum of Art available to the entire blind population of the State. (II-B).
RC-37	Design an Upward Writing Device.	IIT Research Institute 10 West 35th Street Chicago, Illinois 60616 J. A. Sullivan.	To design and produce prototypes of a low cost, durable, upward writing device which will permit writing Braille from left to right with correct reading orientation. (III).

*Code of Interest Category: I, Vocational; II-A, Prevocational-Centers; II-B, Prevocational Processes; II-C, Prevocational-Processes-Optical Aids; II-D, Prevocational Processes-Mobility Demonstrations; II-E, Prevocational-Processes-Testing; III, Equipment; IV, Personnel.

VOCATIONAL REHABILITATION ADMINISTRATION GRANT FUNDS
FISCAL YEARS 1966-1967

PROJECT NO.	GRANTEE	New Grants	
		CALENDAR YEAR BEGAN	GRANT AWARDS
1771	Illinois Braille and Sight Saving School Jacksonville, Illinois	1966	\$ 12,000
1846	Oregon Commission for the Blind Portland, Oregon	1966	20,928
2026	University of Tennessee, College of Medicine, Memphis, Tennessee	1966	6,427
2029	Florida Council for the Blind Tallahassee, Florida	1966	13,800
2049	Virginia Commission for the Visually Handicapped, Richmond, Virginia	1966	19,960
2065	Boston College Chestnut Hill, Massachusetts	1966	18,056
2174	Department of Children and Family Services, Springfield, Illinois	1966	13,000*
2185	Smithsonian Institution Washington, D. C.	1966	15,000*
2287	University of Maryland College Park, Maryland	1966	3,710*
2318	Research Laboratories for the Engineering Sciences, University of Virginia Charlottesville, Virginia	1966	14,918*
2405	National Industries for the Blind New York, New York	1966	10,200*
2469	North Carolina Museum of Art Raleigh, North Carolina	1966	15,000*
RC-37	IIT Research Institute Chicago, Illinois	1966	17,506
Totals			\$180,505

*Pilot Study - One Year Only.

VOCATIONAL REHABILITATION ADMINISTRATION GRANT FUNDS
FISCAL YEARS 1966-1967

PROJECT NO.	Continuation Grants		GRANT AWARDS
	GRANTEE	CALENDAR YEAR BEGAN	
1004	Industrial Home for the Blind Brooklyn, New York	1962	\$ 89,750
1228	Metropolitan Society for the Blind Detroit, Michigan	1963	17,000
1232	Arkansas Enterprises for the Blind Little Rock, Arkansas	1963	8,800
1296	Cleveland Society for the Blind Cleveland, Ohio	1964	44,106
1306	Services to the Blind, Division of Welfare, Concord, New Hampshire	1964	18,000 ¹
1327	Hawaii State Center for the Blind and Visually Handicapped Honolulu, Hawaii	1964	15,429
1336	North Dakota School of Science Wahpeton, North Dakota	1963	35,672
1343	Cincinnati Association for the Blind Cincinnati, Ohio	1964	7,600
1346	Columbia Lighthouse for the Blind Washington, D. C.	1964	6,650
1407	American Foundation for the Blind New York, New York	1964	18,100 ¹
1415	D. C. Department of Vocational Rehabilitation, Washington, D. C.	1964	22,000
1445	Vocational Rehabilitation Division Charleston, West Virginia	1965	9,824
1480	Rehabilitation Institute Detroit, Michigan	1964	36,968
1485	University of Cincinnati, College of Medicine, Cincinnati, Ohio	1964	57,245
1487	Catholic Guild for All the Blind Newton, Massachusetts	1965	30,684

¹Supplement to prior award.

VOCATIONAL REHABILITATION ADMINISTRATION GRANT FUNDS
FISCAL YEARS 1966-1967 (Continued)

PROJECT NO.	Continuation Grants		GRANT AWARDS
	GRANTEE	CALENDAR YEAR BEGAN	
1538	Evansville Association for the Blind Evansville, Indiana	1964	\$ 13,000
1539	Rhode Island Association for the Blind Providence, Rhode Island	1964	13,829
1541	Houston-Harris County Lighthouse for the Blind, Houston, Texas	1964	2,517 ²
1542	Cincinnati Association for the Blind Cincinnati, Ohio	1964	7,500
1578	State University of New York Albany, New York	1964	20,461
1616	Division of Vocational Rehabilitation Atlanta, Georgia	1964	9,904
1626	Department of Vocational Rehabilitation, Washington, D. C.	1964	25,000
1641	Tennessee School for the Blind Nashville, Tennessee	1965	7,630
1690	Cleveland Society for the Blind Cleveland, Ohio	1964	9,880
1692	Services for the Blind, Department of Social Welfare, Lansing, Michigan	1965	8,581
1693	New Hampshire Association for the Blind Concord, New Hampshire	1965	27,973
1770	Services for the Blind, Vocational Rehabilitation Agency, Grand Forks, North Dakota	1965	16,314
1784	Department of Special Education, State College at Los Angeles Los Angeles, California	1965	62,876
1787	State University of New York at Buffalo, New York	1965	5,419

² Project was cancelled effective September 30, 1966.

VOCATIONAL REHABILITATION ADMINISTRATION GRANT FUNDS
FISCAL YEARS 1966-1967 (Continued)

Continuation Grants			
PROJECT NO.	GRANTEE	CALENDAR YEAR BEGAN	GRANT AWARDS
1836	American Foundation for the Blind New York, New York	1965	\$ 3,672 ¹
1898	American Foundation for the Blind New York, New York	1966	4,000
1906	Social Science Research Center University of Puerto Rico Rio Piedras, P. R.	1965	61,805
2064	Albert Einstein College of Medicine Yeshiva University Bronx, New York	1965	25,612 ¹
Totals			\$743,801

¹Supplement to prior award.

GRANTEE AGENCIES OF VOCATIONAL REHABILITATION
ADMINISTRATION GRANTS CONCERNING BLINDNESS

GRANTEE	Listed Alphabetically	PROJECT NUMBER
Boston College Chestnut Hill, Massachusetts		2065
Department of Children and Family Services Springfield, Illinois		2174
Florida Council for the Blind Tallahassee, Florida		2029
Illinois Braille and Sight Saving School Jacksonville, Illinois		1771
IIT Research Institute Chicago, Illinois		RC-37
National Industries for the Blind New York, New York		2405
North Carolina Museum of Art Raleigh, North Carolina		2469
Oregon Commission for the Blind Portland, Oregon		1846
Research Laboratories for Engineering Sciences, University of Virginia, Charlottesville, Virginia		2318
Smithsonian Institution Washington, D. C.		2185
University of Maryland College Park, Maryland		2287
University of Tennessee College of Medicine, Memphis, Tennessee		2026
Virginia Commission for the Blind Richmond, Virginia		2049

PROJECT DIRECTORS OF VOCATIONAL REHABILITATION
ADMINISTRATION GRANTS CONCERNING BLINDNESS

Listed Alphabetically

PROJECT DIRECTOR	PROJECT NUMBER
Blitzer, Charles	2185
Coppage, William T.	2049
Eichorn, John R.	2065
Emanuele, George J.	2029
Goodpasture, R. C.	2405
Hartong, Jack R.	1771
Hiatt, Roger L., M.D.	2026
Inkster, Douglas E.	2174
McVey, E. S., Ph.D.	2318
Moore, J. W., Ph.D.	2318
Stanford, Charles W., Jr.	2469
Sullivan, J. A.	RC-37
Tanner, K. Nolan, M.D.	1846
Wiedel, Joseph W.	2287

REPORTS RESULTING FROM VOCATIONAL REHABILITATION
ADMINISTRATION RESEARCH AND DEMONSTRATION
PROJECTS CONCERNING BLINDNESS

- 226 Washington University School of Medicine, St. Louis, Missouri.
Milder, Benjamin, M. D., Project Director. Visual Aids Clinic. Unpublished final report, March 1962.
- 442 Georgetown University, Washington, D. C.
O'Rourke, J. F., M. D., Project Director. Ophthalmology and Blindness. Unpublished final report, August 1963.
- 498 University of Texas, Southwestern Medical School, Dallas, Texas.
Byers, Jerome L. (Browning, C. W., Project Director). Low Vision Optical Aids Clinic. Unpublished final report, October 1964.
- 515 University of Mississippi Medical School, Jackson, Mississippi.
Johnson, Samuel B., M. D., Project Director. Low Visual Aids Clinic. Unpublished final report 1963.
- 567 Alabama Institute for Deaf and Blind, Talladega, Alabama.
Gentry, E. H., Project Director. Regional Training Facility for Piano Tuner Technicians. Unpublished final report, 1963, (Includes reprint of information bulletin on the Regional School).
- 617 University of Miami, Miami, Florida.
Norton, Edward W. D., M. D., Project Director. A Demonstration of Extending Optical-Aid-Center Services, Skills, Knowledge and Research Data to Local Communities. Unpublished final report, October 1, 1966.
- University of Miami, Miami, Florida.
Frieder, Wm. A. Low Vision Aids - A Practical Manual. Unpublished Manual, 1966.
- 654 Maryland Workshop for the Blind, Baltimore, Maryland. 21223.
Ratchford, William S. Blind. Mechanical Devices for the Blind. Unpublished final report, June 1963.
- 852 Sinai Hospital of Detroit, Detroit, Michigan.
Mintz, Morris J., M. D., Project Director; Gayner, Ernest M.; Gordon, Arnold H. Low Vision Clinic. Unpublished final report, December 1966.
- 915 The New York Association for the Blind, New York, New York 10022.
Crawford, Fred L., and Lutzman, Sidney (Wesley D. Sprague, Project Director). Counseling and Placement of Blind Persons in Professional Occupations: Practice and Research. Published final report, February 1966.
- The New York Association for the Blind, New York, New York.
Crawford, Fred L., Sprague, Wesley D., Project Director. A Manual of Practices and Procedures in the Establishment and Operation of a Professional Counseling and Placement Service. Unpublished final report, March, 1965.

REPORTS RESULTING FROM VOCATIONAL REHABILITATION
ADMINISTRATION RESEARCH AND DEMONSTRATION
PROJECTS CONCERNING BLINDNESS (Continued)

- 1018 Eye-Bank for Sight Restoration, New York City.
Martinez, Miguel, M. D., Project Director. Corneal Replacement with Optical Prostheses. Unpublished final report, 1964.

- 1107 Stanford Research Institute, Menlo Park, California.
Gardner, K. W., Project Director, and Bliss, J. C. A Mobility Aid for the Blind to Supplement the Cane. Unpublished final report, May 1966.

Stanford Research Institute, Menlo Park, California 94025.
A Mobility Aid for the Blind to Supplement the Cane. Film, black and white, sound, 16mm., 10 minutes, demonstrating the capabilities of the mobility aid.

- 1169 Mecklenburg County Association for the Blind, Charlotte, No. Car.
Couchell, Peter, Jr.; Keating, William P.; and McCoig, Ralph J. (Project Director). The Value of Mobility Instruction As A Technique to Motivate Blind Individuals. Unpublished final report, August 1966.

- 1328 Arkansas Enterprises for the Blind, Inc., Little Rock, Arkansas.
Kumpe, Roy, Project Director. The Mobility and Orientation Instruction of Blind People. Unpublished final report, October 1966.

- 1382 Eye Research Foundation, Bethesda, Maryland.
Peckham, Robert H., Project Director. The Visual Responses of the Partially Sighted. Unpublished final report, October 1966.

- 1511 New Mexico Department of Public Welfare, Division of Services for the Blind, Santa Fe, New Mexico.
Hebbeln, H. J., Project Director. Mobility and Orientation for the Blind. Unpublished final report, July 1965.

- 1512 Association of Computing Machinery, New York, New York.
Sterling, Theodor D., Project Director. The Blind in E.D.P. Published final report, 1965.

- 1618 Florida Council for the Blind, Tallahassee, Florida.
Martin, Murdock, Project Director. The New Rehabilitation Center of the Florida Council for the Blind. Unpublished final report October 1, 1965.

- 1625 Stanford University, School of Medicine, Palo Alto, California.
Dauterman, William L., Suinn, Richard M., and Shapiro, Bernice. The Stanford Ohwaki-Kohs Tactile Block Design Intelligence Test for the Blind. Unpublished final report, August 1966.

Suinn, Richard M. (Principal Investigator), Dauterman, William L., Project Director. Stanford-Kohs Block Design Test for the Blind. Test Kit, August 1966.

Suinn, Richard M., and Dauterman, William L. Manual for the Stanford-Ohwaki-Kohs Block Design Test for the Blind, Unpublished, August 1966.

REPORTS RESULTING FROM VOCATIONAL REHABILITATION
ADMINISTRATION RESEARCH AND DEMONSTRATION
PROJECTS CONCERNING BLINDNESS (Continued)

- 1683 American Printing House for the Blind, Louisville, Kentucky.
Hooper, Marjorie S., Project Director. Code of Braille Textbook
Formats and Techniques. Published final report (one of two code
books), Braille and inkprint, 1965.
- Nemeth, Abraham, The Nemeth Code of Braille Mathematics and Scien-
tific Notation. Published final report (one of two code books), Braille
and inkprint, 1965.
- 1836 American Foundation for the Blind, New York, New York 10011.
Handel, Alexander F., Project Director; Koestler, Frances A., Editor.
The COMSTAC REPORT: Standards for Strengthened Services. Pub-
lished final report, 1966.
- 1898 American Foundation for the Blind, New York, New York 10011.
Roberts, Harold G., Project Director. Salaries for Selected Occupa-
tions in Services for the Blind. Special publication, January, 1966.
- 1901 Office for the Blind, Department of Public Welfare, Harrisburg,
Pennsylvania.
Bauman, Mary K., and Yoder, Norman M., Project Director. Placing
the Blind and Visually Handicapped in Clerical, Industrial and Service
Fields. (Also available in Talking Book and Braille editions.) Published
final report, 1966.
- 1969 The Jewish Guild for the Blind, New York City.
McGuire, M. Anne (Project Director) and Sillen, Janet (Mrs.) Asst.
Project Director. Early Rehabilitation Services for the Blind. Unpub-
lished final report of Pilot Study, June 1966.
- RC-22 Georgetown University, Washington, D. C.
Christoph, Ilse H., and Juberts, Anda, (MacDonald, R. Ross, Project
Director). Two-year Program of Teacher-Training and Research on
Teaching Aids for the Blind. Unpublished final report, August 1966.
- Christoph, Ilse H. Instructional Manual for Swing Leaf Unit: The
Model City. Undated.
- Christoph, Ilse H., and Christoph, Lutz U. Instructional Manual for
Swing Leaf Unit: The Model House. September 1964.

U. S. OFFICE OF EDUCATION RESEARCH PROGRAMS
FOR VISUALLY HANDICAPPED

BUREAU OF EDUCATION FOR THE HANDICAPPED
(Division of Research)

PROJECT NUMBER	IDENTIFICATION DURATION AND COST	GRANTEE AND PRINCIPAL INVESTIGATOR	PURPOSE
5-0332	Methods of Teaching Braille Reading 2-1/2 Years Cost: \$77,374	San Francisco State College San Francisco, California Georgia L. Abel	To test which methods of teaching braille reading produce better braille readers in terms of reading rate, reading comprehension and general reading achievement.
5-0421	Improvement of Tactual Symbols for Blind Children 4 Years Cost: \$27,450	The American Printing House for the Blind Louisville, Kentucky Carson Y. Nolan	To refine the symbology used on maps; to study methods of designing maps to insure maximum legibility; and to study the amounts and types of information that can be conveyed to blind children through tactual maps.
5-0702	Development of an Expanded Reading Code for the Blind 2 Years Cost: \$40,343	University of Louisville Louisville, Kentucky Emerson Foulke	To attempt to overcome deficiencies in the present Braille code by developing and testing a punctigraphic stimulus alphabet that contains more characters than the present code, and to construct several response alphabets matched to the stimulus alphabet, including contracted and technical alphabets.
5-1050	The Comprehension of Rapid Speech by the Blind 4 Years Cost: \$73,345	The University of Louisville, Kentucky Emerson Foulke	On the basis of previous studies, to evaluate what appears to be the best training method and to explore those factors which appear to have an important influence on the comprehension of rapid speech.
6-1179	Comprehension of Full Length and Telegraphic Materials Among Visually Impaired and Normal Sighted Children 1-1/2 Years Cost: \$64,303	Michigan State University East Lansing, Michigan Clessen J. Martin	To determine if condensed texts (reading material in which irrelevant phrases and words are eliminated) will accelerate the learning of a fact and improve recall by blind, partially sighted, and normally sighted children.

U. S. OFFICE OF EDUCATION RESEARCH PROGRAMS
FOR VISUALLY HANDICAPPED (Continued)

BUREAU OF EDUCATION FOR THE HANDICAPPED
(Division of Research)

PROJECT NUMBER	IDENTIFICATION DURATION AND COST	GRANTEE AND PRINCIPAL INVESTIGATOR	PURPOSE
6-1190	A Computer Translation of Grade Two Materials from Print to Braille 3 Years Cost: \$73,800	American Printing House for the Blind Louisville, Kentucky Robert L. Haynes	To perfect a procedure for translation by IBM 7090 com- puter of ink print to Grade 2 Braille; to explore the feasi- bility of extending the pro- cedure to more technical li- terature, and to develop a program that would bring this translation system within the capabilities of smaller data processing systems.
6-1928	The Blind Learn- ing Aptitude Test 2 Years Cost: \$26,556	University of Illinois Urbana, Illinois T. Ernest Newland	To standardize a test of learn- ing aptitude for blind children aged 9 to 16 and obtain its correlations with other stand- ardized tests of intelligence and language achievement.
6-2464	Preliminary Standardization of a Scale of Orien- tation and Mobility Skills of Young Blind Children 1 Year - 8 Months Cost: \$26,979	California State College Los Angeles, California Francis E. Lord	To prepare a scale of mobili- ty skills for evaluating blind children, establish norms for ages 2 to 12 years, and write a manual to accompany the scale.
6-2975	Comparison of Several Approaches for Teaching Braille Reading to Blind Children 2 Years Cost: \$14,971	Gorge Peabody College for Teachers Nashville, Tennessee Randall Harley	To demonstrate three ap- proaches to teaching begin- ning reading to blind children and to obtain evidence on the relative effectiveness of each method.
6-8477	Application of Research Findings in the Teaching of Listening Skills to Visually Handi- capped Children 1 Year - 3 Months Cost: \$4,100	Dominican College Blauvelt, New York Sister Jean Marie Rathgaber	To develop and disseminate a curriculum for training lis- tening skills of blind, elemen- tary school children.

U. S. OFFICE OF EDUCATION RESEARCH PROGRAMS
FOR VISUALLY HANDICAPPED (Continued)

BUREAU OF EDUCATION FOR THE HANDICAPPED
(Division of Research)

PROJECT NUMBER	IDENTIFICATION DURATION AND COST	GRANTEE AND PRINCIPAL INVESTIGATOR	PURPOSE
6-8925	A Planning Project to Study the Feasibility of Computer Production of Braille Materials for Public School Blind Children 8 Months Cost: \$9,600	University of Southern California University Park Los Angeles, California Calvin C. Nelson	To investigate (a) the need for various forms of Braille in the public schools, (b) the manner in which computer- ized Braille can be most readily made available, and (c) the means for developing a program for the translation of Grade 2 Braille on the Honeywell 222 High Speed Braille Printer.

NATIONAL INSTITUTE OF NEUROLOGICAL DISEASES AND BLINDNESS
CURRENT RESEARCH PROJECTS IN THE AREA OF BLINDNESS

GRANT NO.	TITLE	INSTITUTION AND INVESTIGATOR	PERIOD	GRANT AWARD
3336	Factors in the Success of Guide Dogs for the Blind.	Guide Dogs for the Blind, Inc. Clarence J. Paffenberger San Rafael, California	6/1/65 - 5/31/67	\$ 38,508
4738	Quantitative Measures of Echo Detection in the Blind.	Stanford Research Institute Menlo Park, California Charles E. Rice, Ph.D.	9/1/66 - 8/31/67	115,236
4870	Reading and Listening in Learning by the Blind.	American Printing House for the Blind. Louisville, Kentucky Carson Y. Nolan, Ph.D.	9/1/66 - 8/31/67	19,009
5398	Classification of Impairment of Visual Function.	Association for the Aid of Crippled Children New York, New York Maya Riviere, Ph.D.	6/1/66 - 5/31/67	30,048
5577	Perceptual Thresholds of Non-Visual Locomotion: Effects of Auditory Cues.	University of California at Los Angeles, Los Angeles, California Bryant J. Cratty, Ed.D.	9/1/65 - 4/30/67	17,701
6035	The Effect of Full-Time Contact Lens Wear.	Pacific University College of Optometry Forest Grove, Oregon William R. Baldwin, O.D.	6/1/66 - 5/31/67	4,250
6069	Natural History of Retrolental Fibroplasia.	Columbia University College of Physicians and Surgeons New York, New York William C. Cooper, M.D.	9/1/65 - 4/30/67	17,901

NATIONAL INSTITUTE OF NEUROLOGICAL DISEASES AND BLINDNESS
CURRENT RESEARCH PROJECTS IN THE AREA OF BLINDNESS (Continued)

GRANT NO.	TITLE	INSTITUTION AND INVESTIGATOR	PERIOD	GRANT AWARD
6281	Alloplastic Substitution for Opacification of Cornea.	Cedars-Sinai Medical Center Los Angeles, California William Stone, Jr. M.D.	12/1/65 - 8/31/67	\$ 47,113
6412	Tactile Reading Studies.	Stanford University Stanford, California James C. Bliss, Ph.D.	12/1/66 - 11/30/67	42,775
6634	Classification of Vision Impairment and Blindness.	National Society for the Prevention of Blindness, Inc. New York, New York Paul R. Scheeche, Sc.D.	9/1/66 - 8/31/67	9,644

NINDB
CLK:db

March 7, 1967

U.S. PUBLIC HEALTH SERVICE RESEARCH CONCERNING BLINDNESS

National Center for Health Statistics

By Ronald Wilson, Health Statistician

The National Center for Health Statistics of the United States Public Health Service is currently analyzing data on vision impairments collected by the Health Interview Survey between July 1, 1963 and June 30, 1964 (see *Blindness Annual 1964*, pages 42-43 for a description of the sample). Prior to fiscal year 1964, the Survey prepared estimates of the number of persons with visual impairments from negative responses to the question, "Can you see well enough to read ordinary newspaper print with glasses?" In an attempt to better define and describe persons with visual impairments, the 1964 Survey asked three additional questions of persons who reported an eye disease or injury or any degree of visual loss: "Can you see well enough to recognize the features of people you know if they are close enough?" "Can you see objects that move, such as cars moving or people walking?" and "How much trouble would you say you have in seeing—a great deal, some, or hardly any at all?" Where visual loss appeared to be indicated by responses to these questions a supplementary set of questions was asked to obtain detailed information related to their visual loss. This supplement included questions on activity limitation due to vision, receipt of financial aid, receipt of talking books, restriction of social activities, type of aid needed to get around, cause of visual impairments, living arrangements, and employment status.

The data collected for this project is currently being analyzed for publication of a report—"Characteristics of Persons with Vision Impairments." The analysis will be limited to those persons over five years of age with vision impairments (excluding persons with eye diseases). On the basis of the 1964 Survey the estimated number of persons in the civilian, noninstitutional population six years old and over in the United States with visual impairments is 5,029,000 of whom 969,000 have both eyes involved and cannot read newsprint. The table shows the degree of vision impairment by age and sex as well as the rates per 1,000 persons.

Most of the analysis will not be done in terms of the detailed degree of visual loss indicated in the table but rather in terms of the five major categories: total impaired, total—both eyes involved, both eyes involved—cannot see newsprint, both eyes involved—can see newsprint, and one eye involved. The following brief description of some of the tables will give a preview of what is planned to be included in the forthcoming report:

1. The degree of vision impairment cross tabulated with age and sex.
2. The degree of vision impairment cross tabulated with the degree of limitation of activity, sex and age.
3. Limitation of social activities such as visiting with friends, club activities, reading and receipt of talking books cross tabulated with sex, age, family income, and education.
4. Degree of vision impairment crossed with living arrangements, such as living with relatives, living near relatives, living alone, owning, renting or boarding.

5. Employment status crossed with age, sex and degree of impairment.
6. Degree of impairment crossed with other chronic conditions the visually impaired person also reported.

Although many of the tables will include more than two variables, the relatively small number of visually impaired persons prevents the cross tabulation of more than two variables at a time in most cases. Since the data were gathered entirely by interviews, it will be impossible to equate degree of visual impairment with levels of visual acuity. Cause of the vision impairment will not be discussed in the forthcoming report since it will be a part of a later publication covering a number of different types of impairments.

Degree of vision impairment of persons 6 years of age and older by sex and age:
United States, July 1963 - June 1964

	Both Sexes	Sex		Age	
	All Ages (6+)	Male	Female	6-64	65+
Number in thousands					
Total ¹	5,029	2,270	2,759	2,614	2,415
Both eyes involved ²	2,666	1,005	1,661	1,159	1,507
Cannot read newsprint	969	348	621	290	679
Cannot see features, moving objects or light	59	} 108 ³	} 83 ⁴	} 80 ³	} 85 ⁴
Cannot see features, moving objects, can see light	73				
Can see features or moving objects	156				
Can see both features and moving objects	682	240	442	210	472
Can read newsprint	1,687	651	1,036	865	822
Cannot see features and/or moving objects or great deal of trouble seeing	140	} 96 ⁵	} 86	} 95 ⁵	} 83
Some trouble seeing	116				
None or hardly any trouble seeing	1,431				
One eye involved	2,281	1,229	1,052	1,411	870
Rate per 1,000 persons					
Total ¹	31.3	29.3	33.1	18.2	141.9
Both eyes involved ²	16.6	13.0	19.9	8.1	88.5
Cannot read newsprint	6.0	4.5	7.4	2.0	39.9
Cannot see features, moving objects or light	0.4	} 1.4	} 1.0	} 0.6	} 5.0
Cannot see features, moving objects, can see light	0.5				
Can see features or moving objects	1.0				
Can see both features and moving objects	4.2	3.1	5.3	1.5	27.7
Can read newsprint	10.6	8.5	12.5	6.0	48.6
Cannot see features and/or moving objects or great deal of trouble seeing	0.9	} 1.2	} 1.0	} 0.7	} 4.9
Some trouble seeing	0.7				
None or hardly any trouble seeing	8.9				
One eye involved	14.2	15.9	12.6	9.8	51.1

¹ Includes unknown number eyes involved.

² Includes unknown degree of impairments.

³ Due to small cell frequencies, the first three categories of "cannot see newsprint" were combined.

⁴ Due to small cell frequencies, the first two categories of "cannot see newsprint" were combined.

⁵ Due to small cell frequencies, the first two categories of "can see newsprint" were combined.

Source: National Center for Health Statistics, Health Interview Survey.

(Provisional data based on household interviews of the civilian, noninstitutional population.)

U.S. PUBLIC HEALTH SERVICE RESEARCH CONCERNING BLINDNESS

National Institute of Neurological Diseases and Blindness

Biometrics Branch

The Model Reporting area for Blindness Statistics (MRA), sponsored by the National Institute of Neurological Diseases and Blindness and mentioned in the 1964 AAWB Annual "BLINDNESS," now comprises 14 States with a combined population equal to about one-fifth of the United States population. It is expected that within a year the population covered by the MRA will be about one-third of that of the country. Motivated by the two basic objectives of making better statistics available on blind persons and of stimulating research in the field of blindness, the MRA is a voluntary association of States maintaining registers of blind persons which have joined in a cooperative effort to collect uniform information so as to arrive at comparable and meaningful statistics on blindness. Statistical reports covering the reported incidence and prevalence of blindness in the MRA States have been published for the years 1962, 1963 and 1964; the 1965 report is in press. A study of the survivorship of blind persons, based on an MRA register, has been published. Another study of the relationship of perinatal factors and the occurrence of blindness in children in an MRA State is in press.

Information concerning the MRA may be secured from the Project Director, Hyman Goldstein, Ph. D.; Chief, Biometrics Branch, NINDB, National Institutes of Health, Bethesda, Maryland.

U. S. VETERANS ADMINISTRATION, PROSTHETIC AND SENSORY AIDS SERVICE
RESEARCH ON AIDS FOR THE BLIND

Eugene F. Murphy, Ph.D.
Chief

Prepared by: Howard Freiburger
Electronics Engineer

Research and Development Division
Prosthetic and Sensory Aids Service
Veterans Administration
252 Seventh Avenue
New York, N. Y. 10001

(This summary was prepared February 28, 1967 for use in the AAWB Annual. The data are supplementary to similar materials appearing in earlier issues of the Annual. Only active projects are mentioned here.)

Continuation Projects

PROJECT NUMBER	IDENTIFICATION DURATION AND COST	CONTRACTOR AND ADDRESS	PRINCIPAL PERSONNEL	PURPOSE
V1005M- 1253	Outputs for Reading Machines 4/1/57 to present Cost: \$258,931	Haskins Laboratories, Inc. 305 East 43 Street New York, N.Y. 10017	Franklin S. Cooper, Ph.D. Jane Newman (Gaitenby)	To study audible outputs for reading machines for the blind, and to develop the psychoacoustic, linguistic, phonetic, electronic, and mechanical details necessary to achieve a first-rate output, i.e. machine-made speech not too divergent from natural speech.
V1005M- 1254	Word-Reading Machine 4/19/57 to present Cost: \$27,000	Haskins Laboratories, Inc. 305 East 43 Street New York, N.Y. 10017	Franklin S. Cooper, Ph.D. Paul Brubaker Jane Newman (Gaitenby)	To construct a machine capable of producing "compiled speech" from a tape-recorded store of some 7000 words spoken in a special way by a trained speaker. The device was demonstrated in 1966, and a contract-termination final report is now in preparation.

U. S. VETERANS ADMINISTRATION, PROSTHETIC AND SENSORY AIDS SERVICE
RESEARCH ON AIDS FOR THE BLIND
(Continued)

Continuation Projects

PROJECT NUMBER	IDENTIFICATION DURATION AND COST	CONTRACTOR AND ADDRESS	PRINCIPAL PERSONNEL	PURPOSE
V1005M- 1914	Sensory Aids Subcommittee 3/31/65 to present Cost: \$6,500	National Academy of Sciences 2101 Consti- tution Ave., N.W. Washington, D. C. 20037	Prof. R. W. Mann, Chairman A.B. Wilson, Jr., Exec. Director CPRD	To provide ad- visory and con- sulting services regarding re- search programs in aids for the blind and for the deaf.
V1005-M- 1943	Personal-Type Reading Machine 9/12/58 to present Cost: \$437,423	Mauch Labora- tories, Inc. 3035 Dryden Road Dayton, Ohio 45439	H. A. Mauch G. C. Smith	To develop a reading machine for the blind which is relatively por- table, capable of use at higher reading speeds than possible with the optophone, and sufficiently low in cost that it may be acquired by an individual blind person.
V1005M- 9217	Obstacle Detec- tors for the blind 6/6/61 to present Cost: \$215,039	Bionic Instru- ments, Inc. 221 Rock Hill Road Bala Cynwyd, Penna. 19004	J. M. Benjamin T. A. Benham D. R. Bolgiano E. D. Meeks	To construct a typhlocane simi- lar to the VA standard, but in- cluding three gal- lium arsenide- laser optical sys- tems: one to probe space ahead at the head and shoulders height to give warning of impending over- hanging obstacles; a second to range ahead to give early warning of obstacles before they come within cane reach: the third to "look" down to give early warning of large

U. S. VETERANS ADMINISTRATION, PROSTHETIC AND SENSORY AIDS SERVICE
RESEARCH ON AIDS FOR THE BLIND
(Continued)

Continuation Projects

PROJECT NUMBER	IDENTIFICATION DURATION AND COST	CONTRACTOR AND ADDRESS	PRINCIPAL PERSONNEL	PURPOSE
V1005M-9217 (Cont'd)	(Continued)	(Continued)	(Continued)	drop-offs like platform edges and stairwells. A first operating model was demonstrated in Dec. 1966.
V1005P-365-A	Optophone Trials 10/15/64 to present Cost: \$10,177	Amer. Cent. for Research in Blindness and Rehab. 770 Centre Street Newton, Mass. 02158	L. H. Riley, M.D. A. Harrington	To determine the performance attainable by blind individuals with the Battelle and other optophones. Current emphasis is on self-teaching at home with only occasional visits by the instructor.
V1005P-376-A	Evaluation of the Kay Guidance Device 5/11/65 to present Cost: \$46,320	Amer. Cent. for Research in Blindness and Rehab. 770 Centre Street Newton, Mass. 02158	L. H. Riley, M.D. G. M. Weill, Ph.D. A. Y. Cohen, Ph.D.	To evaluate the ultrasonic aid for the blind developed by L. Kay and built in 1964 by Ultra Electronics Ltd., London, England. The controlled phases of this evaluation have been completed and reported on. Current interest is in home and field use under less supervised and controlled conditions.
V1005P-5321	Spelled Speech 11/1/60 to present Cost: \$58,479	Metfessel Laboratories 5100 Victoria Avenue Los Angeles Calif. 90043	M. L. Metfessel, Ph.D. C. Lovell, Ph.D.	To develop an audible output for a reading machine for the blind operable on a letter-by-letter basis.

U. S. VETERANS ADMINISTRATION, PROSTHETIC AND SENSORY AIDS SERVICE
RESEARCH ON AIDS FOR THE BLIND
(Continued)

Continuation Projects

PROJECT NUMBER	IDENTIFICATION DURATION AND COST	CONTRACTOR AND ADDRESS	PRINCIPAL PERSONNEL	PURPOSE
V1005P- 5321 (Cont'd)	(Continued)	(Continued)	(Continued)	Spelled speech meeting the requirements of the contract has been developed. A final contract - termination report is currently being written by the contractor.
INTRA- VA	Staff work in VA R&D Division Cost: Unavailable	Research and Development Division Prosthetic and Sensory Aids Service, N. Y.	E. F. Murphy, Ph.D. H. Freiburger	The work of the Division includes INFORMATION DISSEMINATION (Papers in professional journals, maintenance of a reference collection, bibliographic activity, publication of a bulletin, arranging conferences, presenting talks), CONTRACT SUPERVISION, and in-house RESEARCH with the optophone.

BIBLIOGRAPHY OF NEW PUBLICATIONS RESULTING FROM VA RESEARCH CONCERNING BLINDNESS

- V1005M-1253 Gaitenby, Jane H., "Problems in Machine Conversion of Print to Speech," Bulletin of Prosthetics Research, BPR 10-5, Spring 1966, pp. 37-44, October 1966.

Haskins Laboratories, "Status Report on Speech Research," a serial report on VA and other work at Haskins Labs., the first issue being dated February 1965.

Studdert-Kennedy, Michael, and Franklin S. Cooper, "High-Performance Reading Machines for the Blind; Psychological Problems, Technological Problems, and Status," paper presented at St. Dunstan's International Conference, June 1966, proceedings in preparation.

- V1005M-1943 Smith, Glendon C., and Hans A. Mauch, "The Development of a Reading Machine for the Blind," Summary Report to PSAS, VA, for period July 1, 1965 to June 30, 1966, 49 pp., June 30, 1966. [This report also appears in the Bulletin of Prosthetics Research, BPR 10-6, pp. 98-124, Fall 1966.]

Smith, Glendon C., "The Development of Recognition and Direct Translation Reading Machines for the Blind," paper presented at St. Dunstan's International Conference, June 1966, proceedings in preparation.

Smith, Glendon C., "A Family of Portable Reading Machines for the Blind," paper WG-16 presented at the 50th Anniversary Meeting, Optical Society of America, Washington, D.C., March 16, 1966.

- V1005M-9217 Benham, T.A., "The Bionic Instruments Travel Aid," paper presented at St. Dunstan's International Conference, June 1966, proceedings in preparation.

- V1005P-365-A Riley, L.H., "Determination of Performance Attainable with the Battelle Optophone," paper presented at St. Dunstan's International Conference, June 1966, proceedings in preparation.

- V1005P-376-A Riley, L.H., G.M. Weil et al, "A Training and Evaluation Program for the Kay Ultra Mobility Device," summary report, 84 pp., covers period May 11, 1965 - June 30, 1966. [Reprinted BPR 10-6, Fall 1966, and may also appear in a mid-1967 issue of AFB's Research Bulletin.]

Riley, L.H., "Evaluation of the Sonic Mobility Aid," paper presented at St. Dunstan's International Conference, June 1966, proceedings in preparation.

- INTRA VA "BULLETIN OF PROSTHETICS RESEARCH," a semi-annual journal prepared in the Prosthetic and Sensory Aids Service, Veterans Administration. Issues designated BPR 10-1 Spring 1964, through BPR 10-6, Fall 1966 have been published to date.

INTRA VA (Cont'd) Each issue regularly contains notes on the VA research program in aids for the blind, and some issues contain full-length articles on the subject. BPR 10-1 and 10-2 are now out of print, but BPR 10-3 and later issues may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Freiberger, H., "Sensory Research Discussion: 'Sonar' and Electronic Reading for the Blind," *Science*, Vol. 147, No. 3662, p. 113, March 5, 1965.

Freiberger, H., and E.F. Murphy, "Reading Machines for the Blind," *Science*, Vol. 152, No. 3722, pp. 679-680, April 29, 1966.

Freiberger, H., "Research in Sensory Aids for the Blind, State of the Art, 1966," in *Blindness 1966*, Annual of the AAWB, pp. 155-161, circa June 1966.

Freiberger, H., "The Sixth Technical Conference on Reading Machines for the Blind," *Bull. Prosthetics Research*, BPR 10-5, Spring 1966, pp. 8-24, October 1966.

Freiberger, H., "Rehabilitative Aids for the Blind," paper presented at Second Annual ASME Biomechanical and Human Factors Conference, Washington, D.C., April 3, 1967.

Murphy, E. F., "Reading Machines for the Blind," paper WG17 presented at the 50th Anniversary Meeting, Optical Society of America, Washington, D.C., March 16, 1966.

Murphy, E. F., "Electronic Reading Machine Research," remarks at Conference on Aid to the Visually Limited, The Amer. Optometric Assn., Washington, D.C., March 25, 1966, proceedings in preparation.

Murphy, E. F., "...and Sensory Aids," *Bull. of Prosthetics Research*, BPR 10-5, Spring 1966, pp. 1-7, October 1966.

VOCATIONAL REHABILITATION ADMINISTRATION
TRAINING PROJECTS — REHABILITATION OF THE BLIND
FY 1965 and 1966 Supplement

VRA Grant No.	Sponsor	Project Director	Subject
<u>LONG-TERM:</u>			
385	American Association of Workers for the Blind 1511 K Street, N.W. Washington, D. C.	Isabella Diamond	Rehabilitation of the Blind.
236	Boston College Chestnut Hill, Mass.	John R. Eichorn	Mobility Instruction of the Blind.
594	Hadley School for the Blind 700 Elm Street Winnetka, Illinois	Donald W. Hathaway	Rehabilitation of the Blind.
597	National Rehabilitation Association 1522 K Street, N.W. Washington, D. C.	Doris Margolis	Rehabilitation of the Blind.
555	Overbrook School for the Blind Philadelphia, Pennsylvania	—	Rehabilitation of the Blind.
231	Department of Public Welfare Office for the Blind Harrisburg, Pennsylvania	Norman M. Yoder	Rehabilitation of the Blind.
240	State University of New York Department of Industrial Arts Oswego, New York	James Hastings	Industrial Arts Instruction.
267	Southern Illinois University Rehabilitation Institute Carbondale, Illinois	Louis Viececi	Employment Opportunities for Blind Persons in Competitive Employment.
284	Western Michigan University School of Graduate Studies Department of Education Kalamazoo, Michigan	Donald Blasch	Mobility and Home Teaching.
<u>SHORT-TERM:</u>			
C-40	American Foundation for the Blind 15 West 16th Street New York, New York	M. Robert Barnett	Employment of Blind Persons in Service Occupations, Par- ticularly in Hospital Settings.

VOCATIONAL REHABILITATION ADMINISTRATION
TRAINING PROJECTS — REHABILITATION OF THE BLIND
FY 1965 and 1966 Supplement (Continued)

VRA Grant No.	Sponsor	Project Director	Subject
C-103	American Foundation for the Blind 15 West 16th Street New York, New York	M. Robert Barnett	Supervision for Rehabilitation Teaching Supervisors.
C-27	Arkansas Enterprises for the Blind 2811 Fair Park Boulevard Little Rock, Arkansas	Roy Kumpe	Tri-regional Train- ing Institute for Psychologists.
C-110	Arkansas Enterprises for the Blind 2811 Fair Park Boulevard Little Rock, Arkansas	Roy Kumpe	Training Institute for the Counselors of the Blind Em- ployed in Region VII.
C-115	California State College 5151 State College Drive Los Angeles, California	Stewart A. Johnston	Training Course for Rehabilitation Teachers of the Blind in Regions VIII and IX.
C-72	Cleveland Society for the Blind Cleveland, Ohio	Cleo B. Dolan	Training Program for State Directors, Administrators and Supervisors with Responsibilities in Areas of Vending Stand Services.
C-52	Cresap, McCormick & Paget Management Consultants New York, New York	—	Vending Stand Auto- mation.
C-50	Florida State University Tallahassee, Florida	Russell J. Keirs	Workshop on Home Teaching for the Blind in the Rehabilitation Process.
C-109	Hunter College 695 Park Avenue New York, New York	Herbert Rusalem	Text Reference on the Vocational Rehabili- tation of Blind Persons.
C-60	Minneapolis Society for the Blind 1936 Lyndale Avenue South Minneapolis, Minnesota	Melvin E. Saterbak	Training Course for Rehabilitation Center Personnel.

VOCATIONAL REHABILITATION ADMINISTRATION
TRAINING PROJECTS — REHABILITATION OF THE BLIND
FY 1965 and 1966 Supplement (Continued)

VRA Grant No.	Sponsor	Project Director	Subject
C-82	National Rehabilitation Counseling Association 1522 K Street, N.W. Washington, D. C.	Alfred McCauley	Training Course on the Problems of Placing Blind Persons in Pro- fessional Occupations.
C-65	Department of Public Welfare Room 102 Health and Welfare Building 7th and Forster Streets Harrisburg, Pennsylvania	Norman M. Yoder	Training Course to Stimulate Place- ment of Blind Persons in Federal Em- ployment in Civil Service Region 3.
C-47	Richmond Professional Institute 901 West Franklin Street Richmond, Virginia	Wade Stalnaker	Mobility Instruction for the Blind.
267	Southern Illinois University Rehabilitation Institute Carbondale, Illinois	Louis Viececi	Employment Opportunities for Blind Persons in Competitive Employment.
240	State University of New York Department of Industrial Arts Oswego, New York	James Hastings	Industrial Arts Instruction.
C-75	Temple University Medical School Philadelphia, Pennsylvania	Bert K. Boone, M.D.	Seminar on Reha- bilitation of Persons with Reduced Vision.
C-64	Western Michigan University School of Graduate Studies Department of Education Kalamazoo, Michigan	Donald Blasch	Workshop Dealing with Problems of Training Newly- blinded Homemakers.
284	Western Michigan University School of Graduate Studies Department of Education Kalamazoo, Michigan	Donald Blasch	Mobility and Home Teaching.

VOCATIONAL REHABILITATION ADMINISTRATION
TRAINING PROJECTS — REHABILITATION OF THE BLIND
FY 1965 and 1966 Supplement

Contract or Grant No.	Institution	FY 1965 ¹	FY 1966 ²
<u>LONG-TERM:</u>			
385	American Association of Workers for the Blind	\$ 30,100	\$ 31,050
236	Boston College	137,198	139,506
594	Hadley School for the Blind	—	5,067
597	National Rehabilitation Association	—	2,000
555	Overbrook School for the Blind	3,433	—
231	Pennsylvania Department of Public Welfare	43,333	—
240	State University of New York at Oswego	16,714	14,951
267	Southern Illinois University	60,006	67,076
284	Western Michigan University	164,181	165,083
<u>SHORT-TERM:</u>			
C-40	American Foundation for the Blind	—	6,000
C-103	American Foundation for the Blind	—	10,675
C-27	Arkansas Enterprises for the Blind	1,690	—
C-110	Arkansas Enterprises for the Blind	—	4,997
C-115	California State College at Los Angeles	—	11,330
C-72	Cleveland Society for the Blind	4,499	—
C-52	Cresap, McCormick and Paget	20,000	—
C-50	Florida State University	—	6,600
C-109	Hunter College	—	10,900
C-60	Minneapolis Society for the Blind	3,500	—
C-82	National Rehabilitation Counseling Association	—	7,500
C-65	Pennsylvania Department of Public Welfare	3,000	—
C-47	Richmond Professional Institute	—	8,785
267	Southern Illinois University	6,000	6,000
240	State University of New York at Oswego	15,405	15,405
C-75	Temple University Medical School	9,970	—
C-64	Western Michigan University	—	6,000
284	Western Michigan University	10,732	1,112

¹Training Grant Program, Summary of Grants Awarded FY 1965, June 30, 1965, and file copies of Statements of Grant Award.

²Ibid., FY 1966, June 30, 1966, and file copies of Statements of Grant Award.

VOCATIONAL REHABILITATION ADMINISTRATION
TRAINING PROJECTS — REHABILITATION OF THE BLIND
FY 1965 and 1966 Supplement (Continued)

Contract or Grant No.	Institution	FY 1965 ¹	FY 1966 ²
<u>IN-SERVICE TRAINING:</u>			
33	Arizona Services for the Blind	\$ 750	\$ 900
14	Connecticut Bureau of Education and Services for the Blind	729	688
77	Florida Council for the Blind	2,300	3,400
48	Iowa Commission for the Blind	1,594	1,312
19	Kansas State Department of Social Welfare	788	1,095
27	Maine Department of Health and Welfare	413	481
64	Massachusetts Division of the Blind	—	360
78	Michigan State Department of Social Welfare	795	699
49	Minnesota Services for the Blind	925	900
67	Mississippi Rehabilitation Division for the Blind	2,600	3,000
80	Missouri Bureau for the Blind	1,620	1,395
81	Montana Department of Public Welfare	136	600
43	Nebraska Services for the Visually Impaired	977	699
54	New Hampshire Division of Blind Services	—	644
9	New Jersey State Commission for the Blind	850	—
37	Nevada Services to the Blind Division	—	1,500
46	New York State Commission for the Blind	2,100	3,000
79	North Carolina State Commission for the Blind	—	3,842
30	Ohio Department of Public Welfare	2,380	2,185
51	Oregon Department of Vocational Rehabilitation for the Blind	—	114
2	Pennsylvania Office for the Blind	6,050	7,000
22	Rhode Island State Bureau for the Blind	1,377	1,638
34	South Dakota Service to the Blind	566	1,181
68	Tennessee Rehabilitation for the Blind	1,800	3,000
11	Texas Commission for the Blind	1,500	3,400
17	Vermont Division of Societies for the Blind	270	270
70	Virginia Commission for the Visually Handicapped	600	790
44	Washington State Department of Public Assistance	1,000	—
35	Wisconsin Division of Public Assistance	680	268

¹Training Grant Program, Summary of Grants Awarded FY 1965, June 30, 1965, and file copies of Statements of Grant Award.

²Ibid., FY 1966, June 30, 1966, and file copies of Statements of Grant Award.

**THE BEST OF THE PAST
FOR THE PRESENT:
NO. 3 AND NO. 4 OF A SERIES
OF REPRINTS**

MAURICE DE LA SIZERANNE: A PORTRAIT

By Berthold Lowenfeld

Maurice de la Sizeranne was born in 1857 and died in 1924. He lost his sight at eleven years as a result of an accident. His family lived in comfortable circumstances and he was educated at the Paris Institute for the Young Blind and later taught music there for some time. He soon found his real mission in organizing efforts to improve the conditions of the blind.

He devised a braille shorthand system which was adopted or served as a pattern in many other countries. In 1883, he founded the Journal Valentin Haüy, a forum in which all problems concerning the blind were discussed. Later on he established "Louis Braille", a magazine printed in braille which became popular throughout the world. In order to offer to the blind literary enjoyment he founded the "Revue Braille." These were only some of his activities, but he also founded a braille library and the Museum Valentin Häuy.

His most important single contribution was the founding of the Association Valentin Häuy, the general purpose of which was the promotion of the welfare of the blind. He became General Secretary of the Association and his influence as a moving force in work for the blind became international. He strongly believed in the intellectual capacities of the blind which, until his time, were greatly neglected. He stood for the idea "that none better than the blind themselves can appreciate the needs of the blind," as F. Park Lewis, M.D., who translated "The Blind as Seen Through Blind Eyes" remarked in his Preface.

Among his writings, his volume "The Blind as Seen Through Blind Eyes" is outstanding. It was published in 1888 and received the commendation of the French Academy in 1889.

F. Park Lewis, M.D., an ophthamologist who was a member of the Board of Trustees of the New York Institution for the Blind, translated it into English and it was published by G. P. Putnam & Sons in 1893. It was characterized in its introduction to the French edition as, "This is not only a good book, it is a good deed."

While Sizeranne's writing of about eighty years ago carried the unmistakable flavor of his time, he anticipated many ideas which are now up-to-date and some for which we still struggle.--B.L.

THE BLIND AS SEEN THROUGH BLIND EYES*

By Maurice de La Sizeranne

CHAPTER II

The Intellectual Qualities of the Blind

BLINDNESS, it is hardly necessary to say, in no way affects the mentality in its development. The paleographer with his sight dulled by age, may not be able to decipher the yellow parchments of by-gone centuries, but this fact in no degree lessens his interest in the secrets that they have to tell. The intelligence of the happy child who in the excitement of his play thrusts his eye on the point of his mother's scissors, or who receives in his eyes drops of corroding caustic, is not in the least affected intellectually thereby. The child when his wounds are healed—blind though he be—starts with renewed ardor, and the holy father intrenched behind his work quickly recovers himself, and, if he have truly the sacred fire, resumes by other means, but almost always with the same enthusiasm, his work, while the other returns to his play.

What actually have they lost, either of the two,—the child or the man? An instrument, and nothing more. A strong, valuable instrument, I will allow, but is it an indispensable one? I insist that it is not; and it will suffice to recall the names of Milton and Sanderson, Augustus Thierry, Fawcett, George V. of Hanover,¹ and many others which defy contradiction.

In the Researches on the Human Understanding by Reid, is a curious and most interesting chapter which shows so fully the possibilities of the blind, that I am strongly tempted to quote it entire. Unfortunately it is too long, but I cannot resist the desire to reproduce a few of the most important passages.

"Sight discloses little that the blind may not be made to understand the reason therefor."

This is the title of the first chapter, and for the blind is a most precious acknowledgment.

"We will readily appreciate the reason of this," says the author, "if we will take the trouble to compare the appearance which an object presents to the eye with the description given of it. I believe that a man born blind may have a very distinct idea,

*First published in France, 1888. Authorized translation by F. Park Lewis, M.D.

if not of the thing itself, at least of something that closely resembles it," and further, "and of those things, the appearance of which can be only suggested or inferred, while he may not be able actually to picture them to himself, he can nevertheless understand perfectly from the description what they can do, and all the things of which we gain a knowledge by the eye, he may do the same by the ear." Reid then says, "that while a man born blind may not know himself that light exists, he has yet within his own head stars without number," and, he adds, "he may be made to have the clearest conception of it all.

"If," he continues, "it were as unusual to be born with the gift of sight as it now is to be born blind, those who saw would be regarded as extraordinary beings, as prophets inspired to instruct the darkened world, which could nevertheless be made to fully understand. We know that inspiration gives no new faculty. It conveys only in an especial manner and by extraordinary methods what the ordinary faculties of humanity can understand and may communicate to others by the usual way.

"If we admit the supposition that we have assumed, the gift of sight would appear to the congenitally blind as the gift of inspiration does to us, for the small number of those thus gifted may communicate their knowledge if they wish to those less fortunate. In truth they may not be able to give a distinct idea of the way in which they receive their impressions. A little round body stripped of its envelope would seem to be an instrument but illy fitted to develop a science more wonderful than the wildest dreams of fancy."

Relative to appearances, Reid says: "If we observe the operations of the mind in the use we make of this fancy, we will perceive that but little attention is paid to the appearance of visible objects, the appearance does not at all fix the attention, it seems only to reveal other things, and these things that are revealed may be easily and accurately conceived by one born blind."

After giving a number of appearances which are ignored, Reid adds:

"We might cite a thousand other instances which demonstrate that the visible appearances of objects are taken but as indications, and the mind passes rapidly to the thing signified without giving the least attention to the sign itself, and without even noting its existence. In like manner we pay almost no regard to the sounds of a language with which we have become familiar, and our attention is concentrated wholly on the things which they represent. The observation, then, of the Bishop of Cloyne is very important and true, when he says 'that the visible appearance is a kind of language which enables nature at a distance to inform us of the size and shape of things.'"

In a chapter on Visible Appearances, Reid shows that the man who educates only his sight, and forms his judgment of things only from their appearance, is often in his conclusions far from the

truth; and the man who does this frequently takes the signs for the things signified. This language being unknown to him, he is wholly unable to comprehend it, and his attention is concentrated upon the signs because he has no conception of what they signify. We, on the other hand, to whom the language is perfectly familiar, take no heed of the signs and devote our entire attention to the things to be explained. The question being so stated, it will be seen that the blind are deprived of nothing but a perception of the signs, and that every idea is fully accessible to the intelligence, when in fact the eye is reduced to an instrument of perception rather than one of understanding." 2

In order that the faculties shall remain intact after blindness has come, however, it goes without saying that the loss of sight is not consequent upon disease of the brain, or if so the functions of the brain must be left unimpaired. The cause of blindness and the conditions precedent thereto must also of course be considered, as well as the age at which vision was lost, and on these will largely depend the intellectual condition. It is true that those blind from birth always will be deprived of certain things that sight alone can give, but too frequently these are exaggerated both in number and in importance. Moreover, there are relatively few who are congenitally blind.

I shall have the temerity to maintain that the sense of sight has not the preponderating value that a priori we are accustomed to accord to it. Both hearing and touch carry more accurate knowledge than vision. Sight indeed often deceives us, and touch, the closer sight, is constantly required to control and correct the wrong impressions conveyed by the eye. Hearing puts a man in direct contact with his fellows, and consequently with the moral and intellectual world.

Read again this page from our old Charron.

"The hearing is the spiritual sense. It is the medium and the agent of understanding; it is the instrument of the wise and the spiritual, capable of penetrating the depths not alone in the individual, but in the species, to which the sight can never reach, making clear things spiritual and divine which sight instead of aiding serves to obscure. Not only have many great savants been blind, but others who have lost their sight were the better able to philosophize thereby, but never one from being deaf. It is through the hearing that we enter the fortress and make ourselves masters. It is the agent of good and evil. It was by the sound of the harp that the wife of King Agamemnon preserved her chastity from many suitors. David by the same means drove out the evil spirits from Saul and he was restored to health. It was the sound of the flute which softened and strengthened the voice of the great orator Gracchus. In short, science, truth, and virtue have no other pathway by which they may enter the soul but through the ear. The Christian is instructed in his faith by the spoken word, and therein lies his hope of safety. In this sight is of no value to him. 'Faith is the belief in things not seen,' which are acquired through the ear, and apprentices and novitiates are termed auditors, *χατηχούμενοι*. I will add that hearing is our chiefest protection in the darkness and during sleep, and it is then that

only by sound is provision made for our protection. For all these reasons the wisest advise that we keep pure and free from all corruption. For our inner safety, like that of a city, we must guard our outer gates and walls that the enemy may not enter."

Touch, taste, and smell, and to even a higher degree hearing, bring him into relation with the world of matter. What, then does he lack, and what faculties or functions are added to him by the sense of sight? A conception of colors, of perspective and certain physical beauties; and that is all. Aside from these, there are no intellectual conceptions that thorough teaching, and this is imperative, may not convey to even the congenitally blind.

Apropos of colors, I will again cite a passage from the observations of Reid:

"In regard to colors, a man who was born blind must necessarily be embarrassed, as he has nothing with which to compare them. However, by a sort of analogy he may measurably supplement his deficiency. For those who see, the color scarlet signifies an unknown quality in the object which represents to the eye an appearance often observed. . . .

"But it is quite possible to conceive that the eye is affected by different colors as the nose is by different odors, and the ear by different sounds. It may be conceived that to sight, scarlet differs from blue, as the sound of a trumpet differs from that of a drum, or as the odor of an orange differs from that of an apple. It is impossible to know whether or not scarlet appears to my eyes as it does to those of other men; and if, as may be, the same colors and sounds are unlike to different people, it will always be impossible for us to know wherein those differences consist. It follows obviously then, that one who has been always blind may yet speak so pertinently of colors, may answer in so satisfactory a way all the questions that could be put to him touching on their nature, their composition, their shades and brilliancy, as to make us forget that he lacks the organ that has given us our knowledge of these things."

If the child has not lost his sight till his eighth or ninth year, and especially if he be mentally bright and normally developed, he is absolutely on a level with those who see, for he will retain an idea of color and perspective, which valuable mental equipments are denied to those who have never seen. I have some reluctance in bringing my own personality into a consideration of this subject, but it is the simplest way, and with your permission I will do so.

I lost my sight when I was nine years of age, and I may say that more than twenty years have passed since I ceased to see. I now take the most lively interest in listening to discussions on art, perspective, values, harmony of tone, etc. Each year I have described to me the portraits, and the most interesting genre and landscape paintings as they appear, from those of the vaguist impressionists to the most radical realists. I read with care the art criticisms of the various expositions. The description of a picturesque view has the rarest charm for me. It is a pleasure for me to know what may be seen from any spot at which I find myself, the aspect of the country through which I

pass, the forms and shades of color of the clouds, and the glories of the sunset. It is not from idle curiosity, but because all of the things of which I speak are clearly pictured in my mind. I may say that being the son of a landscape painter I was brought up in the studio, and many a long hour have I patiently assisted in the mixing of color. The mysteries of perspective have been discussed a hundred times in my hearing; seated at a little table in a corner of the atelier I have myself striven, greatly to the detriment of my paper, to apply the colors. In Cassagne's first book of drawings is a certain mill, known doubtless to many a student, which no effort of mine could by any possible exertion be made to assume the form of any respectable mill anywhere on the globe. Heaven preserve me, however, from regretting these hours, for now I can picture in my mind a scene as it is described to me, and it seems to me that I have a larger intellectual life the more I identify myself with the impressions of others. I have always vividly represented to my mind the form, the shape, the color of the things that are spoken of in my hearing, and the scenes described. I have a peculiar fondness for the poetry of Victor Hugo, because of the richness in color of his figures. All of this goes to show, it seems to me, that the most varied ideas may not be foreign to one who has lost his sight in his early childhood. Of the two hearing is certainly the more intellectual of the senses, and I am satisfied that I should have been a thousand times more widely separated from the world of intelligence and life had I lost my hearing than I formerly should have been through the loss of sight. I say formerly with deliberation, because I feel that I am now in possession of an intellectual life, as intense as it is possible for me to enjoy.

I am compelled to say, at the risk of disappointing those who are in search of the philosopher's stone that a love of metaphysics is not as commonly found in the blind as among those who see. There are, however, blind amateur philosophers who will read perhaps with interest the following unpublished lines, written by the philosopher Azais after a conversation with the professors of the Institution for Blind Youths, Paris.

"Aug. 26, 1842. I have received to-day a visit from M. Dufour, and from two other blind professors. We conversed together for more than three hours. I was greatly pleased by the profound intelligence with which they listened to me. It is marvellous to be so well understood on such deeply philosophic themes by men deprived of the sense of sight, and in consequence, having only incomplete ideas of the effects of light, effects which modify results throughout the universe. Doubtless the perfection with which the sense of hearing and that of touch are developed, aid their intellectual conceptions and enable them to get supplementary notions in harmony with those that they have directly received. This is, however, certain, that in hearing their deeply logical arguments on the most abstract subjects, one would perceive with surprise that he had forgotten that he was talking with blind men. They followed in the smallest detail the argument and its demonstration. I have never experienced, in conversing with men who saw, a more intellectual satisfaction, nor found their ideas more definite, more suggestive, nor more fully expressed."

Intellectual mediocrity, that mediocrity of a colorless, indifferent quality that characterizes the vast majority of human kind, largely predominates among the blind, and though brilliant examples of genius are not uncommon, they necessarily form the rare exception.

All that appeals to the imagination, however, has a singular fascination for the blind. Historical records, travels and purely literary works excite greater interest, I am inclined to believe, in the blind than in those who see. In our special schools, courses in history, in geography and literature are followed by those who have most moderate intellectual gifts with very unusual ardor. The blind are extremely fond of listening to reading aloud, and I wish that we might have the teachers in the vicinity of the poorer quarters of the city charged to give public readings for the blind, say twice each week. It would not be necessary to ring a bell in order to secure a good attendance.

When we read in our special schools from Thiers of the Italian or French Campagnes, when we are at the heart of Jerusalem Delivered, when we follow the fortunes of Cinna or Britannicus, one could hear the step of a mouse, and with the exception of a few poor imbeciles who were sleeping quietly, every hearer is held in willing captivity.

One who reads well may do what he will with his blind auditors. He has a most powerful wand, and no one can break the charm. Poetry, however, is one of the idolatries of the blind. More than two thirds of their raised print works are collections of verse. I have often remarked that the blind have actually a passion for poetry. Happy, indeed, when this passion may be satisfied by copying and memorizing the lines of others. It is a public calamity when their emotion can find vent only in versifying themselves. Not that I would throw stones at those who rhyme. I would certainly be attacking many honest souls. But it appears to me that none are justified in writing in verse unless they have been truly touched by the divine fire. It may be noted that I do not practise the same exclusiveness in regard to prose!

I believe that the blind, however, may be poets, and great poets. This has been contested. It has been said: "It is impossible that the poetry of the blind shall be true poetry, because they are shut out from grandest spectacles of nature, which chiefly fire the poetic imagination." But does there not still remain the entire domain of the moral life? Is it not a vast field? He who has explored it to the end, may he not well be crowned?

And then, if there be poetry in that which we see, may it not also be found in what we touch, and in what we hear? The essence of poetry penetrates into sounds and odors with a sort of magnetism, at certain times and seasons; it may be in the forest or on the mountain, by the seaside or the brook. Impressions come at such times with an intensity that sets our very being in vibration, and, without knowing how or why, so perfect is our harmony with our surroundings that all unconsciously we break into songs of joy, or of love, gladness, or of sorrow, and this emotion can be nothing other than poetry of the truest kind.

Doubtless the blind man who undertakes to picture for us a sunset, or a landscape, makes it ridiculous if in prose, unbearable in verse. But read over and again the descriptive lines of Lamartine, and you will realize that there are varied phases of nature which are wholly accessible to the blind.

It is told that La Motte-Houdard, who became blind at an early age, said to a young poet who had come to read to him one of his tragedies: "Your play is exceedingly beautiful, and I can promise for its success. I am pained by one thing, however, and that is that you have been guilty of plagiarism." "What,

sir, of plagiarism?" was the astonished exclamation. "Yes! And to prove how sure I am of what I say, I will recite for you the second scene of the fourth act, which I have learned by heart." La Motte recited this scene without the change of a single word. Every one listened with astonishment without knowing what to say. The author was even more disconcerted than the rest. When the wonderful old poet had sufficiently enjoyed the embarrassment of the young author, he said to him: "Be not distressed, my dear fellow; the scene which I have recited is entirely yours, but it fully deserves to be memorized by every lover of poetry: I made it my own as I heard you read it." This was certainly a remarkable feat of memory. Was it through his blindness, you ask, that La Motte had acquired this wonderful faculty? I doubt it very much. He had doubtless a special genius of the kind that enabled Pliny the Elder to repeat a long series of numbers, having no connection with each other, and which he had heard read but once or twice. But this is very sure, that the necessity that compels the blind to entrust many things to memory is calculated to largely develop that faculty in them. It seems to me that the blind students of this age do not accomplish the prodigious feats with which we are familiar by tradition. I know, however, an old blind professor who carries in his mind numerous musical compositions of various kinds; and another, a woman, who knows by heart a whole throng of classic tragedies, and remembers after a single reading the most complicated passages, and the most inextricable plots of political or diplomatic history.

There was a time when the blind wrote but little. In their instruction the oral method was much more commonly employed than the written, and without doubt the deprivation of books, the fact that the professor should know his text by heart, and the student learn his task from the mouth of his teachers, made necessary for both master and pupil an effort of memory that they are not obliged to make to-day. Notwithstanding this, although the blind are now compelled to use the memory more than those who see, as a rule they do use it only ordinarily well.

CHAPTER III

The Moral Qualities of the Blind

To characterize the blind morally is not an easy task. The reason is simple. Not more than any other class of individuals grouped because of physical peculiarities,—as near- or far-sightedness,—and aside from personality, modified by occupation or environment, do the blind constitute a class having qualities in common, and no single one gives a truthful idea of the class from which he has been taken.

You have doubtless often had pictured for you with pen or pencil what might be considered a composite portrait of the blind, and I might feel justified not only in assuming that such a sketch must be inaccurate and untrue, but in offering to replace it by a more faithful likeness. I might endeavor honestly to do this, but I should just as certainly fail as any who have tried before. My portrait would perhaps be an exact reproduction of some blind man; it could never represent the abstract blind.

We will go, if you please, into one of the special schools, and study the pupils at their work; for here, perhaps, more than elsewhere, will we find them unhampered by conventionalities and most at home.

Look at this blind boy, for instance, with his frank, open face. His masters say that he is a gentle, lovable, companionable fellow. His neighbor on the right, with a shock of stiff black hair, as unkempt as the rules of the school will permit, has a positive, rather sullen face and anyone will tell you, from the porter to the superintendent of the school, that he is self-contained, brusque, and rough. The boy on the left of the first pupil, however, is widely different from either of these. Here are but three of many. Take ten or twenty, and the same differences will be prominent. We may arrange them in groups having general points of resemblance, but the differences will be infinite when we recognize the thousand shades that make up an individuality. A good writer will find a dozen words that are synonyms; but a discriminating observer will encounter shades of difference in apparent likeness, more numerous in humanity even than in language.

The blind, like all minorities, have been synonymized to excess. Most of those who have written concerning them have proceeded from preconceived theories, and have made their subjects adapt themselves to inflexible Procrustean notions. A principle having been proposed, they deduce from it a multitude of conclusions, from which there is no escape. Certain philosophers have said that all thought emanates from the senses, and consequently the loss of one sense more or less changes the individual in his entirety. It has been decided, always from theory, that the blind, lacking one of the senses, must think and feel and act in accordance with certain established ideas. The conclusion is absolute, without appeal, and universal in its application, as are all the conclusions of those whose deductions are drawn from theory rather than from observation.

Let us in our consideration of this matter leave the assumed fundamental principles of knowledge and establish ourselves simply on a groundwork of facts.³ Facts are the demand of to-day, and these, to be valuable, must be studied scientifically. In the past the blind have been analyzed and scheduled after this manner, but as one reads the result of such investigations it becomes evident that they have been studied as curious phenomena, or as wild animals, and not as living and emotional beings. The intelligent assistance of the object studied has not been employed to aid in these investigations, but in order to demonstrate the skill and power of induction of their delineators, and the blind must play the principal role. Hours will be spent in the consideration of this or that movement, and every action will be carefully watched and noted. From these data, examined at leisure, inferences are drawn and conclusions reached. This is all very good, but the result is always abundantly admixed with error. There remains for this method no other procedure. When they undertake, on the other hand, to study men, whether they see or whether they do not see, it is a far different matter. They are then in the presence of an intelligent being, and it concerns them to remember this. It is better undoubtedly that the investigation be sometimes conducted silently and unconsciously to its subject, who may then be surprised in acts detected in all of their spontaneity. But this method must not be considered except as preparatory to, or in verification of, more serious and more exact observations, which must be made with the active concurrence of the moral being observed. That this may be done one must see him for a long time, must live with him, must enter into his life, inquire of him, converse with him socially, to the end that he shall be known as he is, and not merely as he appears upon the surface. The observations must be carried over a large number of individuals. Then, only, may one hope to know one's subject experimentally, and that with the blind, for example, all of their characteristics in many and various shades may be discovered and recognized.

If you have ever read half a dozen lines written by the class of observers referred to, you will have seen the affirmations that the blind are egotistical, proud, self-contained, or it may be that they are happy or they are sad. I deny most positively such statements, not because there is little in them complimentary to their subjects, but because it is certainly quite as reasonable to say that the blind are large, or that they are small, they are light or dark, or poor or rich. I condemn absolutely such comprehensive generalizations. It must be admitted that there are among the blind those who are proud, or who are egotistical, and I will willingly supplement this list with a multitude of adjectives far less flattering to the substantives which they qualify.

But the important point to make clear is this: We have noted in the blind certain marked defects. Are these due to the fact of their being blind, and might it not be possible for the blind not to have them? In a word, has blindness the inevitable faculty of making those who suffer from it proud, egotistical, self-sufficient, and ungrateful? That is the question. I unhesitatingly say No! And the reason for my belief is this: Too large a number of blind children, like those mentally deficient, while most tenderly cared for in their homes, are most deplorably educated. We must look here then to find that the unlovely qualities which are given as a birth-right to all children, to those who are blind as to those who see, are allowed to develop and are the cause of the defects of which we have spoken. They are due to deficient or injudicious training, and to this alone.

It is exceptional indeed, much as it is to be regretted, that blind children, whether among the poor or the rich, have been properly educated. Sometimes they are neglected, and pushed aside, and then they suffer either materially or morally, and in a majority of instances both materially and morally. Sometimes, on the other hand, they are spoiled by petting and excessive indulgence. Each member of the family is on his feet, anxious to gratify the blind child's slightest whim.⁴ They have constant excuses for his greatest follies, and all that he does even ordinarily well receives most lavish praise. How could it be possible for a child under such conditions to be other than intensely disagreeable? Would not similar training produce in the most lovable child, blessed with two good eyes, identical results? It must not then be said that blindness causes pride and all other faults, but rather that blindness is not a talisman that will guard against the common failings of humanity.

It is an ungrateful task to speak of those who are merely commonplace, in whom is found nothing of the marvellous. The wonderful always fascinates, whether it be good or evil. A writer is saved if he may only say: "Those of whom I write are most extraordinary prodigies." Without this, in fact, why should one speak, or still less, why should one write of them at all?

The blind, perhaps more than most people, have a love of order, at least in the disposition of the furniture and movable objects around the room. But in little affairs, if I know among the blind those who are methodical, I know others also who have so little system as to make wildly jealous the most disorderly of those who see. The necessity for system is impressed upon the blind at every turn they make. As a book or other object cannot be seen it must be searched for, and in order that the furniture may not be stumbled over, orderly habits become imperative.

A house that is always disarranged is agreeable to no one. It is peculiarly embarrassing for the blind, who are obliged to move carefully and hesitatingly if chairs and tables are constantly displaced.

Diderot, in his famous *Lettres sur les Aveugles*, said of the blind Puyseau, the only blind man studied by him, and from whom he has deduced all of his theories, that he worked by night, that he might not be disturbed, and that in the morning his wife found everything in perfect order. To me this demonstrates but one of two things: First, that this blind Puyseau was an odd sort of fellow, with whom I would prefer not to live; or, second, his wife must have been a virago, and only in the night could the poor devil of a distiller find sufficient quiet to make his liquors.

Blindness develops the faculty of observation. When one cannot see and is obliged to draw in large part therefore upon the other faculties, he must analyze and examine more in detail all of the impressions that are conveyed to his other senses. This develops a mental alertness in many, and together with it frequently a gravity of demeanor that may pass for wisdom.

It is very generally admitted that the blind as a class are a happy, cheerful people, while the deaf, on the other hand, are generally sad. But to those who know the blind well it is evident that the gayety so commonly remarked is rather subjective than objective. Let me explain. When we see the blind together we expect, do we not, to find them lugubrious and sad, deploring in continual and tearful elegies the unhappiness of being deprived of the magnificent spectacle of the azure vault above, of the sun, and the moon, and the stars, and of all else that enters into a classical description of nature? We come to them then prepared to pity and console. In reality, however, we meet with nothing of the kind. We find ourselves in the presence of a child, or it may be a man who talks with us on every subject under the sun except his blindness, and this occurs to him only at times, as for instance when something round escapes from his fingers and he has difficulty in finding it again. As a result the natural surprise and the excess of sympathetic tenderness which is not called into requisition lead us to look upon the blind, as a class, as of joyous disposition.

Very often, too, a parallel is established between the happiness of the blind and the sadness of the deaf. And may this not also be explained in the same way? The first impression of the deaf-mute, is as a rule, much more pleasing than is that of the blind. A visitor who for the first time enters a school of deaf-mutes and a school for the blind will find much less that is unusual in the former than in the latter. The deaf children are physically not unlike other children. You approach the deaf without apprehension, for there is no outward mark to indicate their infirmity. It is unusual that the defect of the blind is not at once evident. Almost always the lids are partially closed or the eyes enlarged or atrophied, and the impression produced is one of sadness or of pity. But this first impression is quickly dissipated, because the more intimately you know the blind the more quickly are you put at your ease, and you feel the barrier disappear that is separating you. If your blind acquaintance prove to be a man of intelligence you end by forgetting his blindness completely in the interest of your conversation. With the deaf-mute, on the other hand, the impressions are reversed. The longer you remain in his presence the more his deafness weighs on you. It is intolerable to converse with one who talks much; it cannot be much less painful if he does not talk at all, or is merely deaf and compels you to repeat every word before he can understand you at all. If the results are compared you will, implicitly at least, make brevet generals of gayety of the blind en masse.

The fact is that the blind are not by reason of their blindness levelled down to an equalization of character. Those who live with them will find all kinds of humors, the melancholy and the serious, the happy and the careless. I think that I may say that I know them well and intimately; those of all ages, of all social conditions, and of the most varied characteristics. I know some who are of the finest fibre, with the loveliest dispositions, delicately organized, perfectly attuned, who are loved by all who know them. I know others who are waspish, pretentious, unlovely, and unloved. There are those who are gentle, and those who are passionate, those who are modest, rarely speaking of themselves, and others who are talkative and absorbed in their own personality.

In a word, we will find among the blind the same varied characteristics and qualities as among those who see, neither more nor less, and I trust that those who, with me, grant without the slightest hesitancy that the blind are not by nature worth more than other men, will with equal readiness believe me when I affirm that they are not worth less.

Have I succeeded in giving a just idea of the physical, of the mental, and of the moral attributes of the blind? Can I hope that if to-morrow one of my readers should see coming to him a blind man who has been well educated he will not have an apprehension of finding himself face to face with an extraordinary being in every respect, necessarily awkward, clumsy, embarrassed, and embarrassing, one who is gloomy, rude, unfeeling, unthinking, unreasoning, not speaking as others do, a being having a material, a moral, and an intellectual life altogether singular? One who in a word could inspire one's curiosity or one's compassion, but to whom one must always give, and from whom one could receive nothing useful nor pleasant except his thanks—on the condition that he be not ungrateful? If, then, I have succeeded in restoring to the blind their just estate, I may be followed into the interior of a blind school without apprehension, but before we study what the blind are taught, we will first see how they are instructed.

We will not touch on the instruction of the blind, however, without first speaking of the revered founder of schools for the blind, Valentine Haüy, and I believe it will be both interesting and profitable to sketch the portrait of that grand old philanthropist.

FOOTNOTES

¹"A propos of the royal blind may be cited the Prince of Monaco, Charles III., of whom Liegarde has rightly said: 'Here is a subject equally attractive for either pen or pencil. The majesty of his countenance on which suffering had left a melancholy pallor was but the reflection of a soul filled with light. When the night settled down upon his eyes, the night that so quickly sunk into the heart, it seemed as if an aurora arose to take the place of all light that the eyes had lost. Deprived of a beloved companion and left wholly alone, the Prince knew of but one aim, to bring light in the darkness, to bring happiness to his people. From then on reform followed reform, and largess succeeded bounty.'"—STEPHEN LIEGARDE: La Cote d'Azur.

²Works of Thomas Reid, Superintendent of the Scotch School for the Blind.
Of direct interest in this connection is the discussion on "Intelligence" by Taine.

³This is a grave question. If it be true that blindness produces consequences as radical in the moral and intellectual sphere as in the physical such as to annihilate the perception of light, then the blind are radically different from those who see, and must be so regarded.

⁴In an educational novel, now almost forgotten, by Madame Guizot, appears an excellent portrait of a blind child, of a naturally sweet and winning disposition, but rendered absolutely unbearable by the foolish indulgences of an over-fond mother. See *The Student, or Ravul and Victor*, by Mme. Guizot.

VALENTIN HAUY,
AMIRAUTÉ de FRANCE, et INSTITUTEUR des AVEUGLES.

du ROI
Né à

en Picardie, le 13 Novembre 1745.

INSTITUTEUR des AVEUGLES.



Les Vertus et les Arts lui prêtent leur flambeau ;
Pour éclairer l'Aveugle au fond de son tombeau .



VALENTIN HÄUY: A PORTRAIT

By C. Warren Bledsoe

Valentin Häuy (pronounced AW-eee) is generally credited with having been the pioneer in Europe of formal education for blind children. He aspired to develop both academic training and skills for them which would insure dignity as well as a livelihood. He was most effective as the founder of "L'Institution Nationale des Jeunes Aveugles" (Institution for Young Blind People) in Paris in 1784. Born in 1745, he lived from the age of Louis XV through the French Revolution, the First Empire and into the Bourbon Restoration. He attempted with varying success to influence each succeeding régime in behalf of blind children. His deep preoccupation with their needs carried him through the political disruptions of his time, but he incurred the displeasure of most parties through his lack of commitment to any cause except that of blind people. Though essentially a libertarian, his major successes occurred when he influenced benevolent royalty, chiefly Louis XVI and King Frederick Wilhelm III of Prussia.

Häuy's "Essay on the Education of the Blind" came after approximately 17 years of reflection and experimentation and represented his high point of usefulness. It was written for King Louis XVI and Queen Marie Antoinette when Häuy and his pupils were their guests for an eight-day visit at Versailles during the Christmas holidays of 1786.

An article in the *Paris-Journal* of January 1, 1787, described the performance of Häuy's students on this occasion before an audience chiefly remembered in history for having died on the guillotine five years later:

"Geographical relations were pointed out by Lesueur, the blind professor, both with and without the aid of cards in relief. Quite difficult fractions were reduced to the same common denominator with such a degree of exactitude that the Duc d'Angoulême, to the infinite amusement of the court, sat pen in hand and worked out the problems with them. The pupils presented to the King and the Royal Family a book printed by themselves, 'Essay on the Education of the Blind,' with an ode by M. Huard, one of themselves, followed by models of their little printed works, which had been executed under the careful instruction of M. Clousier, printer to His Majesty, who was second only to Häuy himself in his unselfishness and disinterested zeal for the blind."

In the few remaining years of the old régime, Häuy's school rode the crest of royal patronage, which showed no signs of disintegration in the support it afforded the education of blind children, largely through a fashionable organization called the "Société Philanthropique," many members of which were very shortly to be executed in the Revolution.

Though later Häuy was to go hat in hand to the Revolutionaries in behalf of his blind children, he was not part of the wholesale abandonment of the King when the ill-fated monarch was brought as a captive from Versailles to the Tuileries. With court musicians scarce, Häuy offered, and the King accepted, the services of a blind orchestra in the royal chapel. Thus the music of Häuy's pupils was in the ears of the imprisoned court, desperately planning the disastrous flight to Varennes, which sealed the doom of the monarchy.

When the King had been deposed, Häuy turned to the Constituent Assembly seeking support for his blind pupils. His affairs from then on proceeded in a series of episodes wherein he was chiefly remarkable for over-powering naiveté in attempting to win to his cause factions with murderous intentions toward each other. He suffered arrest as a terrorist for participating in the funeral of Robespierre, while regarded by the Revolutionaries as a truckler to the Bourbons. However, few doubted his continued devotion to the cause of blind children which took him on a kind of Odyssey with his charges through several changes of residence and organization, according to arrangements of unstable governments harassed by the widespread social upheaval.

The order restored by Napoleon offered the most undesirable solution of all, since the children were abruptly ordered to the ancient asylum known as the Quinze-Vingts, which had back of it six hundred years of tradition concerning blindness with which to stand off progress. After a brief period in charge of the pupils housed in that establishment Häuy displeased Napoleon and was dismissed unceremoniously, although later he was given a pension of 2,000 francs. For three years he ran a small private school of his own, after which he was invited by the Emperor Alexander I of Russia to found a school in that country. He undertook this mission and made a stop-over in Berlin, where he found listeners in the King and Queen of Prussia, helping them to choose Dr. Auguste Zeune to head what afterwards proved one of the most successful schools for the blind in Europe. In St. Petersburg though the Autocrat had expressed a wish to found a school, his entourage managed to stand between him and Häuy, claiming there were no blind people in Russia. After several wasted years on this expedition the Emperor's mother attempted to make amends by putting resources at Häuy's command, but language difficulties and Häuy's failing health produced disappointing asylum-like results, for which ironically he was given the order of St. Vladimir.

Häuy returned to France in 1817. A Bourbon king now reigned again and had been easily persuaded that the school for blind children should be separated from the program for adults, since such had been the case under the old régime. Häuy's school was reconstituted. However, a newly appointed head, Dr. Guillié, while in many ways progressive, and credited with reforms, closed his doors to Häuy because of his association with Revolutionaries.

Häuy wrote to a friend, "I smile to be so looked upon."

He never lost favor with his French pupils and after Dr. Guillié's retirement, a celebration was arranged at the school in Häuy's honor. By this time Louis Braille was among the young students.

Half paralyzed, Häuy was unable to revisit the school in the year of his life which remained.

At this time he wrote, "Ah, if I could but walk, or be dragged even, how joyfully would I go three or four hours each day. . .and neither honor nor fortune would I ask in return."

Häuy has been criticized for lack of administrative skills and firmness. However, it is questionable whether a more uncompromising being could have survived to spread the contagion of his ideas. Having that about him which appeared to be weakness, he, nonetheless, held to a single purpose in life with a tenacity few have equalled.

The terms "Father" and "Apostle of the Blind" have clung to his name.

AN ESSAY ON THE EDUCATION OF BLIND

By Valentin Häuy

(Dedicated to the King of France)
Paris, 1786

TO THE KING OF FRANCE

Sire,

The Protection with which your Majesty honours distinguished Talents ascertains your Claim to their Reverence and Respect. But when their Productions have a Tendency to console the Miseries of suffering Humanity, they have still a more powerful Title to attract the attention of Louis the Beneficent. It was under the influence of Sentiments inspired by a Title so amiable, which is deeply engraven on all the Hearts of France, that I conceived the desire of presenting to your Majesty the Fruits of my Labours; if they have any Value, they will owe it to the double Advantage of appearing under a Patronage so august, and of becoming Vehicles to the Bounty expected from their Sovereign by the Young and unhappy, who have been early deprived of the Benefit of Light with all its numerous and important Resources.

I am,
With the profoundest respect,
Sire,
Your Majesty's most humble,
most obedient
and most faithful subject and Servant,

HÄUY.

PREFACE

AMONGST the unfortunate, who have been deprived, whether from the instant of their birth, or by some early accident in the course of their lives, of that organ which most sensibly contributes to our enjoyment of the delights and advantages arising from society, there have been found some who, by the pregnancy of their genius, and the force and perseverance of its exertions, have found out for themselves certain employments, which they were able to execute, and by these pursuits have proved successful in alleviating the miseries of a situation, in itself so afflicting. Some of them, full of penetration, have enriched their memories with productions of genius, and have imbibed from the charms of conversation or from reading, at which they were happily present, knowledge of a nature and extent which it was impossible for them either to acquire or collect from their own internal resources alone, or from the previous repositories in which it was confined.

Others, endued with a dexterity, which might do honour to the most enlightened artist, have performed mechanical tasks with an exactness, neatness, and symmetry, which could only have been expected from hands informed and regulated by the advantage of sight. But in spite of these happy dispositions in the blind, these marvellous exhibitions, which ought rather to be called prodigies, than natural events, could only be, in the persons by whom they were displayed, the slow results of indefatigable industry and obstinate application, and seemed alone to have been reserved for a small number amongst them, who were peculiarly prerogated by nature, whilst the rest of their brethren appeared consigned by destiny to idleness, languor and dependence, without a possibility of escaping from a duration so horrible in its nature, and so permanent in its continuance. Thus with respect to all social utility and importance, people in these unhappy circumstances were to be accounted dead members, even in those societies where their existence was protracted, and its exigencies supplied; and the most part of them victims at once to the double calamity of blindness and indigence, had no other portion assigned them but the miserable and sterile resource of begging, for protracting, if we may so speak, in the horrors of a dungeon the moments of a painful and burdensome existence.

It is to be essentially serviceable to this class of suffering mortals that I have invented a General Plan of Institution, which, by principles and utensils proper for their use, might facilitate to some of these what they could not otherwise accomplish, without almost insuperable difficulty, and render practicable to others, what it appeared impossible for them to execute. I felt the difficulty of this enterprise in its full extent, that it was too arduous to be performed by myself alone; I have therefore been assiduous in my researches for support and assistance. Beneficent characters have, on all hands, exerted themselves with ardour, that they might co-operate in promoting this labour of love. They have laid the foundation of a fabric whose structure will at once reflect honour on their own hearts and on the age which their lives adorn. Each of them indeed, with a laudable emulation, seems to have disputed with me for the cordial pleasure of perfecting and finishing a monument so congenial and so grateful to humanity; and I confess it with delight, if it was permitted to any to claim an honour from such an undertaking, it is they more than any one else, who have a just claim to that honour. I shall therefore avoid,

in the sequel of this work, every expression which may seem to imply any design of appropriating that merit to myself; and I shall there speak only in the person of those who have insured their unalienable right to my gratitude, whether they have contributed to the maturity of this plan by the exertions of their understanding, or by any other means.

CHAPTER I

The Intention of this Plan.

BEFORE we give an account of the motives of our institution, let us be permitted to say a few words on that readiness which we declare ourselves to possess, not only to answer all the objections which may be urged against us, but even to enter into a minute detail of all the circumstances, whose solution the public have a right to expect from us. Though there is scarcely any invention which has not, by its novelty, excited the clamour of envy and of ignorance, we are bold enough to flatter ourselves that our plan has nothing to fear from the malignity of their attacks. The nature of our design, the wisdom of the age in which we live, the humanity of our countrymen—all these circumstances conspire to assure us that we shall only have to resolve, in the sequel of this work, such difficulties as may be proposed by a wise and well-intended criticism; a criticism rather designed to favour our attempts than to discourage us in their prosecution. It is with this hope that we are determined to answer every objection which shall appear to us, either as lying against the motives or plan of cultivation, which we have proposed for the blind. We will do more; we will endeavour to dissipate in the imagination of our readers every prepossession, even in our favour, which may deceive those who have not been present at our probationary exhibitions, and to whom the too zealous partisans of our plan may have represented as marvellous and unaccountable, such circumstances as are its natural and proper effects. In offering thus a faithful delineation of our method, considered in its proper point of view, it is our intention to leave no impressions on the minds of the public with respect to our establishment, but such real and just ideas as they ought to entertain: to teach the blind reading, by the assistance of books, where the letters are rendered palpable by their elevation above the surface of the paper, and by means of this reading to instruct them in the art of printing, of writing, of arithmetic, the languages, history, geography, mathematics, music, &c., to put in the hands of these unfortunate people such arts and occupations as are merely mechanical; spinning, for instance, knitting, bookbinding, &c. From such an institution two objects are in view, both of which benevolent men will own to be of importance.

First, to employ those among them who are in easy circumstances in an agreeable manner. Secondly, to rescue from the miseries of beggary those to whom fortune has been parsimonious of her favours, by putting the means of subsistence in their power; and, in short, to render useful to society their hands, as well as those of their guides.

Such is the end pursued by our institutions.

CHAPTER II

Answer to the Objection against the Utility of this Plan.

THE public has done us the justice unanimously to agree that we have accomplished the first object of our institution in presenting an amusement to the blind who share the bounties of fortune, and if any doubt have arisen it can only be concerning the possibility of realising the hopes which we have given of blending in our establishment the useful with the agreeable. "In teaching

your blind," say the objectors, "all the parts of education which you propose, can you have conceived the project of peopling the republic of letters and arts with men of learning, professors, and artists, each of whom, though blind, shall be capable of making a distinguished figure in these conspicuous departments, or can they even be certain of deriving the means of subsistence each from the labours of his own vocation?" No, we never pretend that those of the blind who even discover the most shining parts shall enter into competition, either in the liberal sciences or mechanical arts, with scholars or artisans who are blessed with the use of sight, even when their talents rise not above mediocrity; but when any or all of these provinces are not properly supplied with persons who to the advantage of sight add professional abilities, the blind may then exert their powers, whether natural or acquired, as well in promoting private as public utility; and in this view it requires no mighty effort of courage to recommend them to the public benevolence and attention; and though their talents should not be sufficient to pre-engage the general taste in their favour, or the necessity of employing them, so considerable as to open a resource for their exigencies, yet the force of humanity alone may be adequate to produce an effect so desirable. How often have we already seen beneficence ingenious in prescribing tasks to these unhappy labourers, that it might have an opportunity of supplying their indigence without wounding their delicacy. This is what at first occurs as an answer to the objection urged against the general utility of our plan, till our readers be convinced by a detail of this work, and still more effectually by experience, to what degree our scheme of education may be carried, and how essentially it may contribute to the subsistence of those among the blind who are born in the depth of want and obscurity.

CHAPTER III

Of Reading, as adapted to the Practice of the Blind.

READING is the only method of adorning the memory, so that it may command the stores which it has imbibed with facility, promptitude, and method. It is, as it were, the channel through which every different kind of knowledge is communicated to us. Without this medium literary productions could form nothing in the human mind but a confused heap of disarranged and fluctuating ideas. To teach the blind, therefore, to read, and to form a library proper for their use, must constitute the object of our first care. Before our time various but ineffectual experiments had been tried; sometimes by the assistance of characters moving upon a board and raised above its surface (a); at other times by the use of letters formed upon paper with the puncture of a pin (b), the principles or elementary characters of reading had been rendered obvious to the perception of the blind. Already had the wonders of the art of writing, which before had appeared chimerical, been realised. Already, under their touch, which was now found a substitute for vision, had the conceptions of the blind assumed a body. But these gross and imperfect utensils only presented to the blind the possibility of attaining and enjoying the pleasures and advantages of reading without affording them the proper means for acquiring them. We had no difficulty in exploring them; their principles had existed for a long time, and were daily exhibited to our eyes. We had observed that a printed leaf issuing from the press presented to the eye, on the contrary side, the letters higher than its surface, but reversed both in their position and in their order.

We ordered typographical characters to be cast of the form in which their impression strikes our eyes, and by applying to these a paper wet, as the printers do, we produced the first exemplar which had till then appeared of letters whose elevation renders them obvious to the touch without the intervention of sight. Such was the origin of a library for the use of the blind.

After having successively employed characters of different sizes, according as we found the touch of our pupils more or less delicate and susceptible, it appeared proper to us, at least during the first periods of our progress, to confine ourselves to that type which has been used in printing the greatest part of this work. This character appears to us as a proper medium amongst those which can be felt and distinguished by different individuals who are deprived of sight, according to the various degrees of tactile nicety with which nature has endued them; or at least according to the degrees of sensibility which diversities of age or occupation may have left them. It will be easily conceived, that when these means are found, there is no more difficulty in teaching a blind person the principles of reading, than in teaching one, whose visual powers are in their highest perfection, and that the blind may pass by an easy transition from the perception of typographical to that of written characters. We do not here speak of characters written in the manner of those who see; for all our endeavours to form characters rising to the touch by the assistance of ink have proved abortive. We have therefore substituted in their place impressions made upon strong paper, with an iron pen, whose point is not slit.

It is unnecessary to mention, that in writing to the blind we do not make use of ink, that the character is deeply impressed, distinctly separated, a little larger than common, and nearly of the same kind with those now in the hands of our reader; that, in short, we never write but on the side of the paper contrary to that which is read, and in such a manner that the position and order of the letters may appear proper when the page is turned. These precautions being scrupulously observed, the blind may read tolerably letters from their correspondents who see, those formed by their own hands, or by the hands of others in similar circumstances (c). They will do more, they will equally distinguish, on the same paper, musical characters and others rendered sensible by our method of procedure, as we shall immediately shew in the sequel.

CHAPTER IV

Answer to various Objections against the Method of Reading proposed for the Blind.

1. "THE elevation of your characters will doubtless be very soon "depressed," says an objector, "and of consequence no longer perceptible to the blind by touch." No person is ignorant of the acuteness of that sense in several individuals, who from their infancy have been obliged to use it, in order to supply the want of that which nature has denied them. A surface which appears the smoothest to our eye, presents to the fingers of the blind inequalities which escape the notice of that organ, though by its assistance those who see exult in being able to perceive the remotest stars that adorn the spacious concave of heaven; and when our pupils distinguish a typographical character by feeling, which may elude even a microscopic eye, when between the thickness of two given objects, if the one differs from the other only by the fourth part

of a French line, they can clearly perceive that difference; when, in short, they read a series of words, after the elevation of the letters is depressed, what have we to fear from the frequent use of their books, except the absolute destruction of the volumes themselves, a misfortune to which those who see are equally liable?

2. "Your books," it is objected, "are too voluminous. You swell a 12mo to the enormous and unwieldy size of a folio; and by thus altering its convenient form, you render it less portable and useful." We might satisfy ourselves with answering to this objection that our art of printing is yet in its infancy, but progressive, and may perhaps one day become perfect, as that which is obvious to the sight has already done; that it may likewise have its Elzevirs, its Barbous, its Peters, its Didot, &c. And since its commencement, how many and how important are the obligations which it already owes to M. Clousier, printer to the King, who assists us by his advice with as much zeal as disinterestedness.

We add that during the interval between its present and its more perfect state we are employed in adapting a method of epitomising, which will considerably diminish the size of our volumes. Of this we hope to give the first specimen in a work which will be immediately printed after this is finished (d). Besides, we will make a selection of authors, nor shall any one enter into our press but such works as by their reputation have merited that distinction; so that on one hand, if by the magnitude of our characters we enlarge our volumes, on the other we shall lessen them by a judicious abridgement; and perhaps one day the library of the blind may become the library of taste and learning.

3. "But confess, then, that your blind scholars read slowly, and that the spirit of the most animated composition will evaporate beneath their fingers, while the words are languidly pronounced without energy and without emotion." Our pupils, it is true, read in slow succession; besides the little practice, which an institution so lately begun allows them in reading, they have the disadvantage of only perceiving one letter at once, as readers who see themselves must do, were their eyes obliged to traverse an opening between each letter equal to the space occupied by one typographical character in this work.

But we hope that after frequent practice in reading and in making use of the abbreviations we have mentioned above, our blind pupils will proceed with greater quickness. Besides, we have never entertained the ambition of qualifying them to be readers for princes, or to declaim in public with all the graces of oratory. Let them only, by means of reading, learn the elements of science; let them find in this exercise an effectual remedy against that intolerable melancholy which corporeal darkness and mental inactivity united in the same person are too apt to produce; these ends attained, will fully accomplish our wishes.

4. "But what good purpose will it serve to teach the blind the letters? Why instruct them in the art of printing books for their peculiar use? They never will be able to read ours. And, from the knowledge which they will acquire by reading, will any considerable advantage result to society?"

Permit us, in our turn, to ask you, To what purpose is it that books are printed amongst all the people who surround us, and exclusively intended for the peculiar use of each? Do you read the language of the Chinese, that of

Malabar, or of Turkey? Can you interpret the Peruvian Quipos, and so many other tongues indispensably necessary to those who understand them? Should you then be transported to China, to the Banks of the Ganges, to the Ottoman Empire, or to Peru, you will there be precisely in the same predicament with one of our blind pupils. With regard to the utility which the knowledge of a blind man in reading may produce to society, without deviating from the sentiment expressed near the end of the following page of this work, we may with pleasure appeal for its reality to the experiment so often repeated under our own eyes, and of which the public itself has been a witness in our exhibitions; we mean the experiment of a blind child teaching one who saw to read (e). We appeal for its reality to the example of the blind person at Puiseaux (f). We appeal to you, in short, ye tender and respectable parents, born to a liberal share of fortune's favours, whose son is just entered into the world, but shall never see the light of heaven; what a sensible satisfaction it is to us to find ourselves in a capacity to alleviate the transports of your grief. Yes, our plan of education bids fair on one hand to restore to your son, already tenderly loved, the dearest prerogative of intellectual existence; on the other to furnish you with the means of gratifying those desires with which your taste for learning and genius inspires you, to procure him an education worthy of a child born in a distinguished rank. And you men of learning, who enlighten us by your exertion of corporeal sight, if the fatigues of unremitted labour for our instruction should one day extinguish that organ, permit us at that unhappy crisis to offer you the means at once of continuing the benefit of your lessons to us, and to you the enjoyment of an advantage of which they are in some measure the agreeable fruits. Homer, Belisarius, and Milton, afflicted with blindness, would with pleasure have consecrated to the service of their country those years of their lives which followed that catastrophe.

CHAPTER V

Of the Art of Printing, as practised by the Blind for their peculiar Use.

THE analogy which the manner of reading adapted to the blind has with their method of printing, having reduced us to the necessity of giving by anticipation, in detail, some circumstances which relate to the origin of their art of printing, it remains for us to explain the principal operations of that art, as adapted to their practice. It will be much the same case with respect to the mechanical operations of printing among the blind as with those who see. It is doubtless impossible for every individual to have an exclusive possession of it (g). The necessity of habitually knowing and practising the different branches of that art, the multiplicity and high price of the utensils requisite for its execution, the civil privileges with which its professors must be endued, all these conspiring obstacles limit its pursuit to a society of the blind, solely formed and intended for its practice. It is in our academy for their education where we hope to constitute the chief place (if we may use the expression), from whence will issue such typographical productions, for instance, as are proper for the use of all the blind who, in their misfortune, shall have the sweet consolation of being born within the dominions of our Monarch (h). Let us proceed to the manner in which our blind pupils perform their typographical labours. We have given to their cases the order of the alphabet, so as to preserve, immediately under their hands, the characters which they shall have most frequent occasion to use. We preferred that distribution under the apprehension

that the blind would be less clever than we have really found them. It is upon the same principle that we make them set their types in a case lined with a copper bottom, and pierced with several lines of small holes, from whence, by the assistance of a pointed instrument, they bring out the types which are to be changed. It is upon the same principle that we cause to be adjusted, in the inside of these cases, iron rulers (moveable by means of their screws), one at the side and the other at the bottom of the page, to keep the lines in it regular. It is, in short, upon the same principle that we raise these cases horizontally in longitude upon four feet, of which the two that support the upper end of the page are one-half lower than those upon which the under end rests; so that without making use of a composing stick the blind compositor may place the words at proper distances, and that they may not be inverted whilst he is composing the remainder of the page.

The way in which the typographical characters of the blind present themselves naturally indicates that the arrangement ought to be made from left to right, as we have observed chap. 3d. And in order to make reading easy to the blind, at least in the first periods of their education, it may prove a happy expedient to leave spaces between the words, and even sometimes between the letters. It is easy to see that when one prints in relieve he cannot print on the other side without being in danger of destroying the former impression, by tracing which with their finger only the blind can read. Likewise, for preserving the pages in the same order that they have in books for the use of those who see, the blind are obliged to paste together, back to back, by their extremities, the four pages of a sheet coming from the press; and then the arrangement of the cases is made in an order different from that of persons who see. Thus the leaves being pasted, they form them into books, by simply stitching and covering them with pasteboard without beating them.

The office of the ordinary printing-press is easily done, by help of a cylindrical press, which is moved by a lever from one extremity to the other, along two bars of iron, between which are placed the forms, or pages that are set, after the manner of printers (i).

We may employ with success the same process for printing in relieve for the use of the blind, musical characters, geographical maps, the principal strokes of designing, and, in general, of all the figures of which the knowledge may be obtained by means of touch. It is upon account of these last objects, above all, that we hope the admirable discovery of M. M. Hoffman will be precious to the blind; we share by anticipation their sentiments of gratitude towards those estimable artists (k).

To the press of which we have spoken a little above we have thought it proper to add a kind of tympanum, by the assistance of which the blind may, at their pleasure, tinge with black, copies of an edition perfectly similar to those which they print on white paper for their own private use.

This procedure, which is equally applicable to music, to geographical maps, or to designs, &c., puts the blind artist in a capacity not only of giving an account to himself of all the productions which he wishes to convey to those who see, but likewise easily to direct their studies by the similarity of copies, on the supposition of his being employed to give them lessons.

CHAPTER VI

*On the Art of Printing, as practised by the Blind for the Use
of those who See.*

IF we have been happy enough to discover the means of rendering printing useful to the blind for their own use; if it is to us that they owe the advantage of henceforth possessing libraries, and of taking from books formed on purpose for themselves, notions of letters, of languages, of history, of geography, of mathematics, of music, &c.; we are not the first who dared to try to make them impress their ideas upon paper by help of typographical characters. We have seen in the hands of Mademoiselle Paradis (1) a letter printed by her in the character called Pica, and in the German language, full of sentiments the most delicate, as well as the best expressed. This attempt gave birth in my mind to the idea of applying the blind to the art of printing for the use of those who see; it has succeeded with us in every kind of work, whether with large or common types, as one may judge by the different specimens which they have exhibited, and which are to be found at the end of this work, if they can possibly be procured.

After our manner of proceeding, the blind, formed according to our institution, compose a typographical plate in imitation of these models, with so much more ease as they are almost continually of the same form; it suffices to write for them the subject with a pen of iron, of which the top is not split, or with the handle of a penknife as we have shewn above in the 3d Chapter.

After having exercised the blind upon the different branches of the art of printing in the manner of those who see, there are found few kinds in which they have not succeeded. We have seen them successively compose, adjust, impress, moisten the paper, touch it, print, &c., &c. (m) We appeal, besides, to competent judges in that affair, and we refer our reader to the report of M. M., the printers, which agrees with that of the Academy of Sciences.

CHAPTER VII

Of Writing

THE example of Bernouilli, who had taught a young blind girl to write, and that of M. Weissenbourg, who, deprived of sight from seven years of age has procured for himself the advantages of fixing also his ideas upon paper by writing, have encouraged us to try the means of putting the pen into the hands of our pupils. But always occupied in our real point of view, that is to say, in rendering our institution in every respect useful to those individuals who were its objects, we have thought that it could not but be curious to cause the blind to write, if they could arrive at reading their own hand; this is what engaged us in causing to be made for their use a pen of iron, the top of which was not split, and with which writing without ink, and supported with a strong paper, they produce upon it a character in relief which they can afterwards read, in passing their fingers along the elevated lines on the back of the page. This elevation, however slight it may appear, is always sufficient, especially if care is taken to place below the paper upon which the blind write a soft and yielding surface, such as several leaves of waste paper, of pasteboard, or of leather. With respect to the proper mechanism of teaching the art of writing

to those who are born blind, it is by no means difficult to be executed; you have only to teach your pupil to trace, with a pointed instrument, the characters ranged in form of lines. But instead of directing the process of this pointed instrument by means of characters in relieve, as M. Weissenbourg has done, it is better to conduct it by letters graven hollow on some plate of metal. We have besides this precaution taken that of giving our printed letters the form of written, in order early to accustom the blind pupil to catch the resemblance. At last, when he has acquired the habit of distinguishing their forms, there remains nothing more for him to write straight but to place upon his paper a frame internally furnished with small rising lines, parallel to the direction of the writing, and distant from one another about nine-tenths of an inch. These parallel lines serve to direct his hand, whilst he transports it from left to right, in order to trace the characters.

CHAPTER VIII

Of Arithmetic

WE have admired the ingenious tables of Saunderson (n) and those of M. Weissenbourg (o); the reason why we have adopted neither of these methods was from another view, viz., that we might preserve, without interruption, the strictest analogy possible between the means of educating the blind and those who see, we have thought that the manner of these last ought to be preferred. Likewise, when our pupils calculate, one may follow their operations step by step.

We have caused to be made for them to this end, a board pierced with different lines of square holes, proper for receiving moveable figures and bars for separating the different parts of an operation.

We have added, to render this board more useful, a case composed of four rows of little boxes, containing all the figures proper for calculation, and which are placed at the right hand of the blind person while he operates. The only difficulty which occurred was to represent all the possible fractions without multiplying the characters which express them. We have thought of causing to be cast 10 simple denominators in the order of the figures 0, 1, 2, &c., even to 9 inclusively; and likewise 10 simple numerators in the same order, moveable in order to be adapted at the head of the denominators. By means of this combination, there is not a fraction which our pupils cannot express.

One may see from what has been said, that our method has a double advantage.

1. A father of a family, or a tutor, can easily direct a blind child in the study of arithmetic.

2. This blind child, when once instructed, may also conduct, in his turn, the arithmetical operations performed by a child who sees.

The blind have, besides, so great a propensity for calculation that we have often seen them following an arithmetical process and correcting its errors by memory alone.

CHAPTER IX

Of Geography

WE owe to Madame Paradis the knowledge of geographical maps for the use of the blind. She herself had it from M. Weissenbourg; but we are astonished that neither the one nor the other has carried to a higher degree of perfection, the utensils which contribute to the study of that science.

They mark the circumference of countries by a tenacious and viscid matter, covering the different parts of their maps with a kind of sand mixed with glass, in various manners, and distinguish the order of towns by grains of glass of a greater or lesser size.

We are satisfied with marking the limits in our maps for the use of the blind, by small iron wire rounded; and it is always a difference either in the form or size of every part of a map, which assists our pupils in distinguishing the one from the other.

These means we have chosen in preference, on account of the ease which they afford us of multiplying, by the assistance of the press, the copies of our original maps for the use of the blind. It will, besides, be more apt than any other to offer itself to the execution of details the most delicate which can affect the touch of these individuals; and the first of our pupils have brought themselves to such admirable perfection in the use of geographical maps, that people see them with surprise, at our exhibitions, distinguish a kingdom, a province, an island, the impression of which is presented to them, independent of other parts of a map, upon a square piece of paper.

CHAPTER X

Of Music

IN tracing the plan of the education of the blind, we have at first looked upon music only as an appendage fit for relaxing them after their labour. But the natural propensity in the greatest number of the blind for this art; the resources which it can furnish to several among them for their sustenance; the interest with which it inspires those who deign to be present at our exhibitions, have all forced us to sacrifice our own opinion to the general utility.

The blind have natural propensities for this art. A considerable number of them, deprived of the means of living, seize with eagerness, through necessity, an employment towards which their inclination had already so powerfully attracted them. It is only the want of instruction, without doubt, which reduces some of them to the necessity of wandering in the streets, from door to door, grating the ear by the aid of an ill-tuned instrument, or a hoarse voice that they may extort an inconsiderable piece of money, which is frequently given them with an injunction to be silent (p).

Others less unfortunate, and giving themselves up by choice to an instrument which affords them more resource, follow the career of Couperin, of Balbatre, of Sejan, of Miroir, of Carpentiers (q).

Our institution will furnish all of them with assistance, whether in the study or practice of their art. Before our time, teachers of the blind were obliged to make them comprehend, by playing them over and over, the small pieces of music which they wished to execute. We have caused to be cast musical characters proper to represent upon paper all its possible varieties, by elevations on its surface in the manner of those which we have devised to represent words (r).

By the assistance of our printed music, then the blind pupil may learn at present the principles of that art, and impress on his memory the different pieces of music with which he wishes to enrich it (s).

He may likewise form to himself a library of taste, composed of the most enchanting musical productions; and in short he himself may transmit to us the fruits of his own genius (t).

With respect to the music introduced into our particular exhibitions, we beg of our readers only to consider it as a decent recreation, which we have seen ourselves obliged to grant to our pupils. Our institution is, in its origin, a kind of workhouse, the different artists and labourers of which amuse their toils from time to time with harmony. And we have, with less reluctance, permitted them to execute some little pieces, even in their public exercises, that the most part of the beneficent people, who have deigned to be present at them, have shown the most lively and sensible compassion on hearing their performances.

CHAPTER XI

Of the Occupations relative to Manual Employments, or Handicrafts.

BEFORE the birth of our institution, some of the blind, doubtless fatigued with that wretched inactivity to which their deplorable situation seemed to condemn them, made efforts to shake it off. (u) Convinced of their fitness for several manual employments, we had no other anxiety but that of selecting such tasks as were proper for them. We applied them with success to spinning. (x) Of the thread which they spun we succeeded in making them twist pack-thread, and of this pack-thread we made them weave girths. Their labours at the Boisseau (y) in making small walking staves of cords, in the working of nets, in sewing, in binding books, all were tried to our satisfaction; and we wanted labourers rather than work; so many are the kinds of manual employment, which one may trust to the unfortunate persons who are deprived of the pleasure of sight.

After these first trials, we will neglect nothing to put early into the hands of a blind child, born of indigent parents, an occupation from which he may one day draw his sustenance. We will thus extirpate the inclination to beggary; and we will finish (if the expression may be allowed us) by grouping our picture, as well as by giving animation to the individual figures it contains.

CHAPTER XII

Of the Manner of Instructing the Blind, and a Parallel of their Education with that of the Deaf and Dumb.

AS we have principally attached ourselves to simplify the means and the utensils proper for the instruction of the Blind, we flatter ourselves we have placed their education within the reach and compass of all the world. This operation, besides that it is easy in itself, requires more courage than knowledge in a master. We believe then, that upon this subject we have no particular advice to give.

By the aid of our books in relievo, every one can teach them to read. Upon the musical works formed in our press every professor of that art may give them lessons. With an iron pen, with plates and moveable characters, executed according to our models, the first masters in writing may teach them that art and arithmetic. In short, there wants nothing but maps in relievo to direct their studies in Geography; and so of other things (y).

We cannot conclude this reflection on the degrees of facility with which the blind may be educated, without drawing a parallel between it and the method of educating the deaf and dumb. However surprising to the eyes of the public the result of our procedure may appear, we are very far from implicitly joining in that rash admiration of some persons who are very willing to give this result a preference to the art of instructing the deaf and dumb: an art, we dare say, incredible to those who have never been witnesses of the success to which it has been conducted by the virtuous ecclesiastic, who is its original author; and with regard to which, several, even of those who have seen the proofs of this art, neither know how to estimate its merit or to feel its difficulties. Let any person in reality follow them step by step; let him take the Abbé in the first instant of time, when he begins to wish to make his first signs understood by his pupil. Let such a one explain to us by what enchanting and magical talents he teaches the deaf to distinguish the moods of a verb; its tenses, and the inflections of its persons. How will one tell us in what manner he insinuates into their minds metaphysical ideas? By what marvellous secret he makes himself understood by the motion of his lips alone, and maintains a kind of conversation with them, extremely expressive, quite silent as it is; and it will be agreed, that the talent of impressing the soul with new ideas, in speaking to the eyes alone, by gesticulations infinitely more eloquent than those of all our orators, is much superior to the talent of awaking in the soul ideas which are already engraven on it, by causing to concur with the impression of the voice, upon the organ of hearing, the delicacy of a touch exercised in seizing the nicest elevations on the surface of a paper. It is a long time since we have been anxious to pay this tribute to M. l'Abbé de l'Epée; we congratulate ourselves on having this task to perform in such favourable circumstances, and we flatter ourselves that our readers will feel all the justice of the deference we pay him (z).

CHAPTER XIII

Of Languages, History, Mathematics, &c.

IT is chiefly for the study of all these objects, that the books which we have invented for the use of the blind, will be to them of immense utility.

Elementary works of languages, of mathematics, of history, &c., will be in reality the first foundation of their library. Those which they can produce themselves, and which shall merit the public approbation, will be justly entitled to a place there (aa).

We will take particular care to join in their library works equally fitted to form the heart and cultivate the mind of our blind pupil, in fixing, as the basis of these studies, the most essential of all studies—that of religion. By the assistance of such principles, we will inculcate the love of his duty, and in particular, gratitude towards his benefactors. In enlivening his days by the interesting details of history, we will cause him to know the French, among whom he will congratulate himself on having received his existence. We will engrave upon his memory the principal facts of their history, and the marks of beneficence and humanity which are mixt with the relation of their achievements. We will cause him, above all, to remark that, in every period of time, the French have distinguished themselves by an inviolable attachment to their Kings. From the faithful picture which we will draw to him of a Monarch, who, formed by himself to inspire that attachment, includes in his equity and beneficence all the particular motives which can add to the energy of this hereditary sentiment, he will feel, as we do, that the most desirable state to which a nation can arrive, is that where the submission of several millions of people towards a common master, presents itself under the image of the respectful tenderness of a large family towards a father who constitutes its happiness.

FOOTNOTES

(a) It is without doubt, by these means that the blind man of Puiseaux, of whom M. Diderot speaks in his letter on the blind, taught his son to read.

(b) We have seen some words thus marked by punctures upon cards in the hands of Mlle. Paradis. This virtuosa is 20 years of age; she was born in Vienna in Austria, the place of her ordinary residence. A kind of apoplexy deprived her suddenly of her sight, at the age of two years. She has principally applied herself to music, and constituted in 1784, at Paris, the chief pleasures of the spiritual concert.

(c) M. Weissenbourg, a boy dwelling at Manheim, having become blind between the seventh and eighth year of his age, celebrated for the knowledge which he has acquired, has preserved the faculty of writing; but this advantage, which is only an object of curiosity, will become of real utility, if, as we hope, he adopts our method.

(d) Examples of these abbreviations, within the capacity and reach of all readers, are in the Treatises of Philosophy, in the Dictionaries, the new Methods and other Elementary Books of Education.

(e) According to the proposal made in advertisements, annunciations and various intimations on the 3rd of December, 1786, page 3204, in the first article of demands, on the 5th of the same month we caused one of our blind to begin teaching a child who saw, to read. During the lessons, the master had beneath his fingers a white book printed in relieve for the blind, whilst the other had under his eyes the same edition in black. This child gave, for the first time, proofs of his advancement in the exercises performed by the blind at Versailles, during the Christmas holidays in the same year.

(f) This blind person, as we have said before, Note (a), gave to his son lessons in reading.

(g) One knows how easy it is to abuse printing in all respects; and not satisfied with the rectitude of our intentions, and the indulgence with which people have honoured our infant printing, the productions of which bear a character of originality easily distinguishable, we have formed to ourselves an inviolable rule not to suffer anything printed to issue from us without the sanction of M. Clousier, printer to the King, and which has not been executed under his eyes, or those of some person commissioned by him.

(h) Till establishments similar to ours be formed in other nations, it will be a pleasure to us to cause to be printed in relievo, and in other languages, by our blind pupils, books destined for the use of strangers who are deprived of sight.

(i) This press is the invention of Sieur Beaucher, chief lock-smith. It has amply and successfully accomplished our wishes, as to the facility with which it is managed without any great effort by a blind child, and by which it admits the mechanism which we have adapted to it. We believe, however, that a perpendicular pressure given to the whole leaf at the same instant, will leave behind it a more solid impression; we hope to find this in a press of another kind, which the Sieur Beaucher has described to us.

(k) Although in pages of this work we have not repeated the names of some of the distinguished printers whom we have heard celebrated, we cannot forbear to confess that according to our manner of thinking, there are many others who appear to us to exercise their employment with *éclat*. We even perceive, in those who compose the body of this society, a general emulation. And obliged, by the nature of our institution, to serve a kind of apprenticeship to this art, we would quote with pleasure a considerable number of well-known productions from different presses which leave no further improvement to be wished; as well for the neatness of the characters, as for the choice of paper, and which have served us as models in the study of printing which we had to go through. Besides, far from erecting ourselves as judges in opposition to persons who cultivate the arts and sciences, whether from situation or taste, we praise even attempts that have not been crowned with success. — See Translation published with "Blacklock's Poems."

(l) This production was executed by the assistance of a little press, which M. de Kempellan, the inventor of the automatic chess-player, had formed for her.

(m) If there is any operation among the blind which requires to be directed by those who see, it is printing for the use of these last we acknowledge. This speculation has been often repeated to us upon other different branches of our institution. But have not clear-sighted persons who labour at the press themselves need of a guide to whose skill they are obliged to pay deference? And in the other states of life do we not see persons more enlightened, directing those who are less, whilst those are in a situation to conduct people less experienced than they? 'Tis thus that, in the day of battle, the general of an army gives order, the intention of which his subaltern officers are ignorant. It is thus that the pilot conducts to the end of their voyage the learned academicians, who are unskilled in the art of navigation.

(n) The arithmetical table of Saunderson was formed of a board divided into small squares placed horizontally and separated one from the other at equal distances; each little square was pierced with nine holes, viz., one on the midst of each side. It was by the different positions of the pegs uniformly placed in different holes that Saunderson could express any kind of number.

(o) We have seen, in the hands of Mlle. Paradis, arithmetical tables which we believe to have been those of M. Weissenbourg. But without a particular study, one cannot follow the operations which are performed by the help of these tables. We do not know if our pupil could operate with equal swiftness and certainty by these means as he could by those of persons who see, and we have no other merit but that of rendering them palpable to him.

(p) If the taste and inclination which certain blind persons have shown for the violin, or for such instruments as can easily be joined with it, were directed by art, perhaps they might make use of it for gaining more decently their livelihood. An estimable citizen,* who approves of all the parts of our institution, without discovering for any of them a particular predilection, suggested to us in the course of one of our exhibitions, that one might usefully employ in the training of blind musicians at festivals.

(q) All the world knows the merit of Mr. Chauvet, blind organist of Notre Dame de Bonne-Nouvelle. They quote in France several other blind people whose talents ascertain the utility of this study for our pupils. How comfortable for us will it be one day to have extracted from this art of harmony the means of subsistence for a part of these unfortunate people, and to have seen them become, by a happy choice, the instruments of beneficence.

(r) It has been objected to us with propriety, that our blind pupils cannot execute and feel the musical characters at the same time, which people who see call performing at sight, but this never was the end which we proposed. What matters it though they perform a piece of music by heart, provided they perform it correctly and faithfully.

(s) No person is ignorant how faithful and sure are the memories of the blind, and with what readiness they furnish them. It is likewise known what a clear conception the greatest number of them discover in difficult operations of mind; talents so astonishing, that one would almost doubt whether nature was more parsimonious in her gifts with respect to them, or anxious to recompense them for those which she has refused.

(t) Mlle. Paradis, who was employed in the study of composition during her continuance in Paris, and who then sought the means of figuring the chords, learned with pleasure that we were making trials on the same subject. We regret that her abrupt departure to go and reap, under another climate, the fruits of her talents, did not leave us time to offer her the result of our procedures, to assist her in fixing upon paper the matter of her study.

(u) Amongst the blind who, not having the advantage of enjoying the pension of Quinze-Vingts, are obliged to ask their livelihood in the capital, we have seen several who occupied themselves in employments relative to handicrafts. The number of these which we can make the blind exercise in our workhouses is very considerable; and we are not afraid to assert, that, if we continue to be favoured, we shall arrive one day at placing all the blind under shelter from indigence by employing them advantageously.

(x) Blind children, who are under instruction in the house of our institution, spin by the assistance of the ingenious machine invented by the Sr. Hildebrand, a mechanic. One among them turns a principal wheel which gives to several smaller wheels a motion which each spinner can stop, quicken or retard, at his pleasure, without disturbing the general order.

(v) The translator takes here the liberty of retaining the original French word, not being able to find an English name for the same utensil. Boisseau properly signifies a bushel, but likewise means an instrument of timber, of a semiglobular form, and about one foot and a half in length, very light, which is placed upon the knee for working. They make use of it in plaiting small round cord, or working girdles of silk, or other works which they call done with the boisseau, to distinguish them from those which are made upon frames.

*Mr. Thierry, Author of the Traveller's Almanack.

(y) We will take pleasure in directing the construction of utensils useful for the instruction of the blind who are strangers. The books and works of music shall be furnished by our blind pupils, and sold for their benefit alone. When we shall have put the last hand to the objects which demand our chief care, we hope to employ ourselves in their amusements, and in everything which can form a decent and innocent recreation for the blind. We believe that it ought equally to enter into our views to teach blind children to walk alone, and without a guide.

(z) We speak with so much more knowledge of the cause of instructing the deaf and dumb; and our opinion is so much more agreeable to truth that obliged, by circumstances from which we could extricate ourselves, to consecrate the leisure which the instruction of the blind left us to that of a young man found upon the coast of Normandy, who is deaf and almost dumb, we have felt in every step how difficult the enterprise was, beyond reach of our powers, and a task alone for M. l'Abbé de l'Epée. We propose to ourselves to give the history of this unfortunate young man. The composition of it shall be done by him, and the print by blind children. The whole shall be introduced by proposals for subscription; the benefits arising from which shall be divided into two equal parts, and given one half to the blind children, and the other to that unfortunate young man.

(aa) It was certainly a desirable and happy thing for Saunderson, author of various productions, to commit them himself to paper, and without being obliged to depend on the fidelity of a Secretary, to be able at every instant to render himself an exact account.

One of our pupils shewing a disposition to poetry, we beg of our readers to permit us to encourage it in subjoining a specimen of his rising talent, after the models of different works in printing, which can be executed by the blind, and which are at the end of this volume.

AN HISTORICAL SUMMARY OF THE

Rise, the Progress, and the Actual State of the Institution of the Blind Children.

Many respectable persons have carried the concern which they felt for our institution, even to demand how such an idea could possibly enter into our mind; by what means we attempted the execution of it; and by what degrees it advanced to the point in which it is at present. Anxious to satisfy a curiosity so laudable, we are eager to subjoin here a concise narrative of the rise, progress, and actual state of our establishment.

A novelty of a kind so singular has attracted for several years the united attention of a number of persons at the entry of one of those places of refreshment situated in the public walks whither respectable citizens go to relax themselves about the decline of day.

Eight or ten poor blind persons, with spectacles on their noses, placed along a desk which sustained instruments of music, where they executed a discordant symphony, seemed to give delight to the audience. A very different sentiment possessed our soul, and we conceived, at that very instant, the possibility of realizing, to the advantage of those unfortunate people, the means of which they had only an apparent and ridiculous enjoyment: the blind, said we to ourselves, do they not know objects by the diversity of their forms? Are they mistaken in the value of a piece of money? Why can they not distinguish a C from G in music, or an *a* from an *f* in orthography, if their characters were rendered plain?

We reflected sometimes on the utility of this undertaking; there another observation came to strike us. A young child, full of understanding, but deprived of sight, listened, with advantage, to correct the errors of his brother in reading. He even frequently besought him to read his elementary books to him. He, more employed in objects of amusement, shut his ears to the solicitations of his unhappy brother, whom a cruel disease carried off very soon.

These different examples soon convinced us how precious it would be to the blind to possess the means of extending their knowledge, without their being obliged to wait for, or sometimes even in vain to demand, the assistance of those who saw.

If the execution of these means appeared to us possible, it did not fail at first to present us with some difficulties. We had need of encouragement, we confess. Made-moiselle Paradis arrived in this metropolis. She shewed us her attempts, and those of M. Weissenbourg. We collected those of the blind who lived before our time; we put into execution several of their proceedings; to these we joined the results of our own, and we formed a general plan of the Institution. There was only wanting a person upon whom we might try our first experiments. Providence deigned, without doubt, to direct our choice upon him.

Francois le Sueur, struck with blindness in consequence of convulsions at the age of six weeks, had not, at the age of seventeen years and a half, any notion relative to literature. Descended from a respectable family, but entirely deprived of the advantages of fortune, and constrained to seek the means of subsistence in the place frequented by people least easy in their circumstances, although perhaps the most laborious, the blind youth scarcely enjoyed the use of reason, when he was afraid of being burdensome to his parents; he soon found himself under the necessity of going and presenting himself at the gates of our temples, there to crave that kind of unsubstantial and momentary

assistance which is given by those who enter, which the indigent often obtain with difficulty from the rich, who industriously avoid their importunities. Full of joy at the least acquisition, he flies with eagerness to the bosom of his unhappy family, to divide the fruit of his solicitations, with the authors of his being, and with three sisters and two brothers, whereof the last is still upon the breast. It was in the midst of this hard life, as little calculated to inspire as to favour a taste for the sciences, that our first pupil began his education. Soon did a noble enthusiasm wholly take possession of him; he snatched from the necessity of labouring for his existence, those moments which he consecrated to study. His efforts were not slow in being followed with success. They demanded of us to see the result of our proceedings; we seized the favourable circumstance of an Academical Assembly, where we were appointed to read a memorial. We took for its subject certain reflections on the education of the blind. M. le Noir, then the magistrate, charged with the administration of the police, was president of this assembly. He saw our first attempts, received them with that concern with which he presently inspired Ministers, protectors of arts and indigence. M. le Comte de Vergennes, M. le Baronde Breteuil, Mr. Comptroller General, and Mr. Keeper of the Seals, were kindly willing to permit that the young Sueur should perform his exercises in their presence, and all these respectable witnesses encouraged our first pupil by their beneficence.

But whilst we were employed in delineating our plan of education for blind children, already had a company of beneficent gentlemen, composed of members of the first distinction, for their birth, their employments, their fortune or their talents; depositaries of the public benefits of which everyone inclines to increase the mass according to his wealth; who snatching an interval from their business or their leisure hours go twice every month to employ themselves at the bottom of a cloister, far from the public observation, about the means of diminishing the number of the unfortunate; already, I say, had the Philanthropic Society laid the foundation of this institution. Twelve poor blind children received from this company each one the assistance of twelve livres per month. Satisfied with our first trials, they designed to intrust us with the care of these unfortunate people. We were not slow in conceiving the hope of adding, to the assistance which they had given them, the product of their labours. What obligations have we not to acknowledge to the whole of this respectable society? And why is it not permitted to us to name those of its members, who having neither reputation nor fortune to acquire, have shared with us, modestly and in silence, the numerous details into which the education of this establishment leads us?

Very soon did our institution acquire a new degree of importance in the eyes of the public. Then they ceased to believe that the power of receiving by touch the education which we proposed was restricted to an individual alone favoured with the propensities inspired by nature. Of the 14 blind children instructed in the first rudiments, there were then found only three whose progress had been slow; because enjoying still a weak ray of light, they obtained at least from touch what remained to them almost entirely lost from the weakness of their sight.

There remained no more to put the last hand to this establishment but the testimony of the learned upon these means. The Academy of Sciences has designed to employ itself in examining them, and drew up the report which we have inserted at the end of this work.

Led by the suffrages of people instructed, by their own experience, by the emotions of a heart disposed to favour the good, the public has been eager from all quarters to contribute to the expense of rearing a house which we have built for suffering nature.

The Royal Academy of Music performed on the 19th of February, 1786, for the benefit of blind children, a concert, in which the audience were divided on one hand between the noble disinterestedness of the members, and on the other between the talents which they displayed on that occasion.

In short, the Lyceum, the Museum, and the Hall of Correspondence disputed among themselves with emulation the agreeable satisfaction of seeing, in the midst of their academical meetings, young blind children lisp out the first elements of reading, of calculation, &c., and in the scenes of learned emulation, where Genius alone had till then found encouragement, beneficence has, for the first time, been seen decreeing a crown.

Enthusiasm gained over particular societies; and the exercises of blind children were always terminated by some acquisition in their labour, sent to the house of the Philanthropic Society, who joining their assistance to what was produced by the funds of the Institution, distributed the sums to them with the tenderness which a good mother equally feels for every one of her children.

Thirty of these unfortunate children, with these assistances, partake the advantages of our institution. Several others, too young to be set to work, receive no less that relief to which their sad situation seems to secure them a right. But in the actual state in which our establishment is, we beg our readers not to regard it but as a beginning. We hope that their sagacity will show them, in these first fruits, a pledge of that success which they promise in the sequel. It is thus that an attentive observer of the productions of nature sees, that the buds which the spring causes to shoot forth from all parts of the trees, announces the fruits which autumn will produce.

AAWB
Blindness 1967

154

8

